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# People & the Planet

Volume 5 Number 4

## PEOPLE AND FORESTS

**Front cover:** Logging in Nigeria
**Credit:** Mark Edwards / Still Pictures

**Left:** Monkey puzzle trees in Chile
**Credit:** Edward Parker

# People & the Planet

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**http://www.oneworld.org/patp/**

## People and forests

Getting to grips with 'the global forest crisis' is not an easy matter. For a start, it involves more than the continuing destruction of some 17 million hectares of tropical forest each year - an area larger than the size of England and Wales. According to the WWF report *Bad Harvest?*, which we review on page 34, the *quality* of most of the planet's forests is also declining, as loggers home in on the richest areas of prime timber with the greatest biodiversity, including old-growth forests in Canada, the Arctic and Siberia. And where the loggers go, poor and landless farmers, who are responsible for most of the forest clearance, often follow. At the same time, air pollution is increasingly playing a part in forest decline, especially in Europe.

So the causes of forest loss and degradation are complex. They reflect the huge consumer demand for wood and wood products; the global economic and trading system which encourages poor countries like Surinam and Gabon to sell off their natural resources; the unequal land tenure systems, which drive poor farmers to search for new land, however suitable that may be for sustainable farming; the pressures of population and poverty as well as 'development' and the temptations of those in power, locally and nationally, to get rich quick by selling off the forest for personal gain. Nor can the international banking system which funds so much damaging logging be left out of the account.

And if the causes of forest destruction are complex, so are the consequences and the suggested remedies. Over the years, the value of forests not only for timber and fuelwood, but for the genetic resources and environmental services, has come to be increasingly recognised. Norman Myers spells out in this issue just what is at stake.

The remedies are another matter. The central theme of Jeff McNeely and all our other contributors on this subject is that local people, who dwell in and around the forest, must be part of the solution. Our report on Forests of Hope, shows how people can protect the woods around them. But if their role is to be sustained, help is needed at all levels - internationally, nationally and at a provincial level. This is also a complicated business, involving patient negotiation between all of those involved and a long learning process. The certification of exported wood may be one of the ways of regulating the big and legal logging companies. Linking the local communities to international objectives, will require much more work in the middle ground, as Don Gilmour explains. Next year, when these matters come before the United Nations, will be a good chance to put on the pressure.

**John Rowley**


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# newsfile

## CAMBODIA'S FORESTS IN THE BALANCE

If Cambodia's future is in its forests - as official signs posted around the country proclaim - its children are in trouble, *writes Elizabeth Kemf.*

The country has pre-sold practically all its remaining forest cover, most of it to Thailand, Malaysia and Indonesia, with other countries on a waiting list - with no remaining unsold trees left to meet the demand from this war-torn country.

In mid-1995, Global Witness, a UK-based environmental non-governmental organization, blew the whistle on the Cambodian Government's forestry practices. In a series of reports, the NGO revealed Cambodia's unprecedented and unconstitutional move to grant 30 logging concessions with foreign countries to log 6.5 million hectares (m. ha) of its prime forest land.

Virtually all forests outside of declared protected areas were pre-purchased, with the biggest sale going to an Indonesian company, Panin, which brokered a deal for a 50-year, 1.4 m. ha concession. The second largest buy was made by a Malaysian company which pre-purchased a 60-year, 800,000 ha concession.

Although the international conservation community had known for years that the Khmer Rouge was selling timber for arms, the scale of the problem was unknown. Environmentalists were shocked to learn that concessions had been officially granted by the country's two Prime Ministers, Prince Norodom Ranarridh and Hun Sen.

International public concern over the fate of the country's forests has grown dramatically in the past few months. This culminated with a statement from the World Bank that if current levels of exploitation continue the forests of Cambodia could be gone in five to ten years.

Days before major donor talks in Tokyo in July, the government of Cambodia released statements outlining a new strategy for halting corruption and illegal cutting in its forests. It promised that a draft forestry code and environmental law would be adopted.

Conservationists welcomed the government's announcements, albeit with scepticism. Enforcement of the forestry code will be difficult with the Khmer Rouge still operating in and controlling sections of the country. Moreover, the government has not been able to stem the illegal wildlife trade with neighbouring Thailand and Vietnam, nor has it been able to clamp down on the illicit flow of timber across its borders into Thailand.

Elizabeth Kemf is Species Conservation Co-ordinator at WWF International and author of *Month of Pure Light: the regreening of Vietnam.*

## POVERTY GAP

Despite a dramatic surge in economic growth in 15 countries over the past three decades, 1.6 billion people - a quarter of the world's population - were left behind and are worse off than they were 15 years ago, according to the UN Development Programme's Human Development Report 1996.

But the very rich are getting richer: the assets of the world's 358 billionaires exceed the combined annual incomes of countries accounting for 45 per cent of the world's people.

Launching the Report, UNDP Administrator James Gustave Speth said that developed nations' leaders should understand that human suffering and tragedies exist not only in the Middle East and former Yugoslavia, but in many other regions. A considerable increase in development co-operation was indispensable in giving credibility to any attack on world poverty, he said.

Growing poverty, unemployment, environmental degradation and the gap between the powerful and the dispossessed were causing despair and instability, he said, adding that it was a 'myth' that market forces in an increasingly globalized market would be enough to replace the need for development co-operation.

"We know that policies favourable to investments and the structural adjustment plans are no solution for most of the developing world." Half the people of Sub-Saharan Africa are likely to be in absolute poverty in five years' time, according to Mr Speth.

Human development in some countries has also been set back by HIV/AIDS, and the report concludes that the world has lost on average 1.3 years of human development progress due to the pandemic. In some countries, the setback was particularly severe: Zambia lost more than 10 years, Tanzania eight years, Rwanda seven years. It predicts that some Asian countries, such as India, Myanmar and Thailand, will also suffer setbacks.

"Governments that do not take the AIDS threat seriously now, or shy away from action because of cultural or religious sensibilities, will pay the price later," concludes the Report.

The Human Development Report 1996 is published by Oxford University Press, price $17.95.

## FOOD SUMMIT

The World Food Summit being held in Rome this November (13-17), takes place against a background of growing concern about the continuing hunger of 800 million people, a decline in world cereal production and stocks, and in food aid, *writes John Madeley.*

"It is unacceptable that hunger and malnutrition continue to diminish the human potential of nearly 20 per cent of the people on earth in an age when we explore the planets and beyond," said Jacques Diouf, Director-General of the UN Food and Agricultural Organization, which is organizing the meeting. The survival of humanity depends on world food security, he believes.

"World food production will have to increase by more than 75 per cent over the next 30 years to keep pace with population growth," said Dr Diouf. Practical solutions are available, he points out,

"many countries, including some of the poorest, have successfully strengthened their food security by improving food availability, stabilising supplies and improving access to food.

"These countries share common characteristics, some of which can be applied elsewhere, like adequate water control, sustained support for the agricultural sector, access to export and import markets and progressive reforms in institutional structure, social services and economic policies."

The Summit is expected to agree on a policy statement and a plan of action. These have been drawn up throughout 1996, with non-governmental organizations making vigorous representations about the summit documents.

## FEEDING AFRICA

To satisfy its population demands by the year 2050, Africa will have to increase food production by 300 per cent, according to a recent study by the UN Food and Agriculture Organization (FAO) and the UN Population Fund (UNFPA).

Asian countries, Latin American and Caribbean countries will have to produce 69 per cent and 80 per cent more food respectively, and North America 30 per cent more.

In Europe, demand for food produce will diminish, says the report which is part of a series of technical papers for the World Food Summit (see above).

According to median UN projections, the world's population will increase by 72 per cent, or from 5.7 billion to 9.8 billion inhabitants between 1995 and 2050.

The report says that developing countries will have to increase their diets to eliminate chronic undernutrition. This process could require a 30 per cent increase in food energy requirements in Africa (40 per cent in sub-Saharan Africa), 15 per cent in Asia and less than 10 per cent in Latin America.

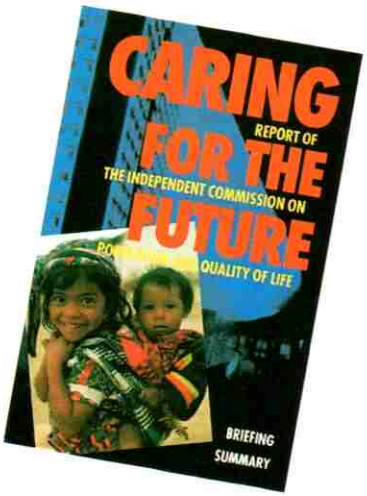
In order to reach a well-balanced diet, people will have to diversify their food intake. According to FAO projections for the year 2010, Africa would have to improve its plant-derived energy by another 26 per cent (or 46 per cent for countries consuming mainly roots and tubers).

The report points out that the root of the food problem is poverty and the lack of access to food for the poor. It predicts that distribution problems will remain in 2050 but that hopefully by then, "populations will be coming to grips with these serious inequalities in order to reduce them further. The health of a large proportion of the world's population and its ability to take its future into its own hands depends on this."

For further information, contact the FAO, Viale Terme di Caracalla, 00100 Rome, Italy. Tel:(+39 6) 5225 3625, Fax:(+39 6) 5225 369.

## QUALITY OF LIFE

Three years after it started work, the Independent Commission on Population and Quality of Life launched its report in June, without much fanfare or press




coverage.

This is a pity because the report, *Caring for the Future*, builds upon the growing consensus that environmental and social sustainability are synergistically connected. It says there must be a radical shift in the way political decisions are made if the issues of population, environment and development are to be tackled effectively.

The report argues that new priorities for aid programmes have to be set, focusing on the poorest people in the poorest nations, and on 'sustainable human development'. This involves much greater emphasis on education, health (including reproductive health), employment, women and conservation of the environment.

The Commission was supported by seven governments (Canada, Germany, Japan, The Netherlands, Norway, Sweden and the United Kingdom), three international agencies (UNFPA, IPPF and the World Bank) and five major private foundations. It was chaired by Maria de Lourdes Pintasilgo, former Portuguese prime minister. Its findings will be reported more fully in a special *People & the Planet* supplement in our next issue.

*Caring for the Future* is published by Oxford University Press at £7.99.

## SWITCHING AFRICA ON

Nearly two billion people worldwide remain without electricity, partly due to the speed of population growth. For despite the fact that over 1.2 billion people have gained access to an electricity grid over the past 20 years this has not kept pace with an increase of 1.5 billion in the human population.

According to a report in *Tiempo* magazine, the situation is particularly serious in Africa, where only half of urban dwellers and a mere eight per cent of rural people, are served by electricity.

One way of easing the problem without adding massively to greenhouse gas emissions is to extend the use of photovoltaic technology (PV), as has been demonstrated in Kenya where 20,000-40,000 solar home systems have been installed.

In South Africa up to 60,000 home PV systems are operating, along with over 500 clinic and school installations and 2,000-4,000 water pumping systems. The World Bank is launching a major 'solar initiative' and a big PV programme in Zimbabwe is being sponsored by the Global Environment Facility (GEF).

While costs have fallen tenfold over the past 20 years, there are still some questions about the future of PV technology arising from the Zimbabwe experience. Though 1,000 or more new systems are being installed there each year, local groups warn that overseas firms may be encouraged to capture the market at the expense of the domestic solar industry and that by focusing on lighting, the project is neglecting other local energy, education, health and agricultural needs, such as water pumps.

Nevertheless, it does appear that photovoltaics could provide local communities with the power they need at a declining cost, if the right policies are pursued.

*Tiempo* is published by the International Institute for Environment and Development (IIED) and the School of Environmental Sciences, University of East Anglia, Norwich, NR4 7TJ, UK. Tel:+44 (0) 1603 592722, Fax:+ (0) 44 1603 507784.

## CUTTING CARBON

The Second Conference of the Parties to the UN Framework Convention on Climate Change which took place in Geneva in July provided a much needed impetus to the negotiations aimed at extending the the emissions control targets set by the treaty, *writes Mick Kelly*. The resulting Geneva Declaration calls for legally binding and significant constraints on emissions.

The 1995 Second Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) did much to strengthen the position of those nations arguing for more concerted action on the climate problem. The report emphasises the dangers inherent in continued greenhouse gas emissions (see *People & the Planet* Vol 5/2).

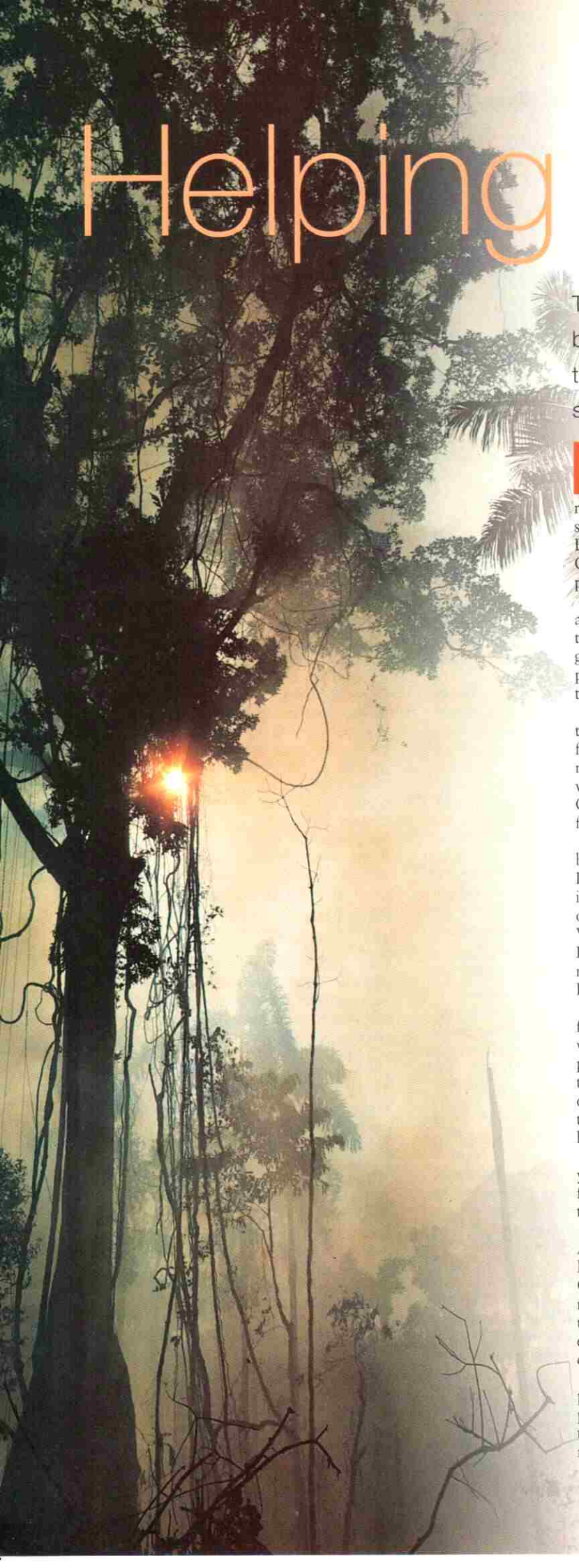
The IPCC report also proved a source of contention. Some nations, such as the major oil producers, refused to accept its findings. There have been claims - vigorously denied - that certain passages of the assessment do not reflect a true scientific consensus.

The Third Conference of the Parties will be held in Kyoto, Japan, in December 1997. A timetable for emissions reductions beyond the year 2000 has to be agreed by that point. To date, little progress has been made on specific targets though a range of proposals is on the table.

There has been a call for carbon cuts of 20 per cent below 1990 levels by the year 2005. As a number of industrialized nations seem unlikely to meet the current goal of stabilization by the end of the decade, a less stringent target, such as a reduction of 5 to 10 per cent in emissions of all gases by 2010, looks a more realistic option.

As Michael Zammit Cutajar, Executive Secretary of the Convention, observed in Geneva, "any new agreement on how much and how fast to reduce emissions must be credible."

Dr Mick Kelly is a researcher at the Climate Research Unit, University of East Anglia, Norwich, UK.



# Helping people

The destruction of the world's forests can only be halted if governments and foresters rediscover the historic links between forests and people says **Jeff McNeely** in this global overview.

Forests are the home to the bulk of the world's biodiversity. They also protect critical watersheds, help purify air and water, and provide the primary source of energy for most rural people in developing countries. Yet the world's forests are in serious trouble. Over 15 million hectares - an area larger than Bangladesh or Greece - are being cleared in the tropics every year. Causes of this loss include logging, land hunger by growing populations of rural people, and simple mismanagement.

And while temperate forests are not shrinking in total area, they are being seriously damaged by industrial pollution in some countries and being heavily logged almost everywhere. The majestic old-growth forests that have inspired artists, writers, and the general public for centuries are fast disappearing, and with this loss people too are losing the benefits that forests historically have provided.

Why are forests being lost so quickly? What can be done to replace the current reality of degradation and destruction with a sustainable future for forests? Answers will come from looking at the historical relationship between people and forests in different parts of the world. While Japan, the United Kingdom, the United States, Brazil, Colombia, and India are very different countries with very different forest problems, all can contribute to the answers we are seeking.

For example, before the voyages of Christopher Columbus brought North American resources to the attention of Europe, the Indians of the eastern woodlands of the United States were a 'potent if not crucial ecological factor in the distribution and composition of the forest', according to Oxford University geographer Michael Williams. Other research has shown that when permanent European settlements replaced them, the woodland became much more widespread and dense. In essence, both Indians and the European colonists designed the forests they preferred.

Further south, the Mexican ecologist Arturo Gomez-Pompa has found that many of the tree species now dominant in the mature vegetation of tropical America were and still are the same species protected, spared, or planted in the land cleared for crops as part of the ancient practice of shifting agriculture. The current composition of mature vegetation, he contends, is the legacy of past civilizations, the heritage of cultivated fields and managed forests abandoned hundreds of years ago.

Thus forests and people have evolved together over thousands of years, with people planting the trees they prefer, using fire to burn forests to improve hunting conditions, and managing forest fallows to maintain their agricultural fields.

This pattern repeats itself in many parts of the world. The American anthropologist William Harp has described how the Emberà, a group living in the lowland tropical rainforest of Colombia and Venezuela, live by hunting, fishing, gathering materials from the forest, and planting gardens in clearings made among the trees. For hundreds of years, they have maintained a system of exploitation and dynamic ecological equilibrium that ensures the continuous availability of essential forest resources.

They have done this by using a range of techniques that have parallels in many other parts of the world: self-reliant technology, protection given to important sites, fertility control, appropriate settlement patterns, flexible social rules, egalitarian social structure, religious constraints and strong tradition of self-interested management

WWF/Philips/Wilkin

**Left: Forest fire in Peru**
**Below: Painted weevil: used to pollinate oil palms**
**Bottom: Kayapo Indian Chief of the Amazon forest**

# save the forests

WWF/Ron Petocz

of forest resources.

But this idyllic picture has also involved considerable hardship, high infant mortality, sometimes-deadly raids from neighbouring groups, and other challenges. Thus the Emberà, like indigenous peoples throughout the world, are attracted to development that promises to free them from their traditional way of life, even though this may change them from self-sufficient producers to guardians of the state.

Government forest policies often involve radical changes in tenure rights and a lack of clarity over ownership of tree and forest products. For example, in India, over 3,000 non-timber plant species are used by people, as green vegetables, oil-yielding plants, fruits, food grains, medicinal plants, fibres, and construction materials. Villages historically had control over their surrounding forest, and since timber was difficult to transport, commercial logging was not a threat. But with colonialism came markets, nationalization of forests, and development which took responsibility for forests away from villagers.

These factors help explain the rapid deforestation of many parts of India, but the government is now changing its priorities from forests-industry-national economy linkages to environment -conservation-rural development linkages. This may require a return of at least some of the forests from national ownership to communal ownership.

While tropical forests receive more global attention than forests in the north, the patterns of use and abuse have followed a remarkably similar historical path. For example, the New Forest in Britain was an early effort at conservation promulgated in 1079 by William the Conqueror. The legend of Robin Hood reflects resistance by common people to the class implications of these early forest preservation laws. And at least part of the ferment of the American Revolution was resistance in New England to the King's monopoly on tree-trunks suitable for ship masts to enable the Royal Navy to rule the seas.

In Japan, the time of the Tokugawa Shogunate (1600-1868) was highly isolationist, so the population had to support itself almost entirely by resources available from within Japan. As a result, forests were heavily exploited, leading to widespread deforestation. After about 1600, laws and regulations about forest use led to a series of measures designed to reduce consumption and increase production through improved forest management. Today, highly-urbanized Japan is a leading importer of timber from both tropical and temperate regions, but two-thirds of its land is forest-covered.

Some governments have accepted the challenge of bringing traditional forest-dwelling people into the mainstream of national development and are seeking appropriate balances between tradition and development. This balance is not an easy one to find. For example, in Pará State of northern Brazil, the 8,000-strong Kayapo have a 3 million hectare reserve established to protect their way of life while allowing them to develop at their own pace. For more than a decade, they have been trading in mahogany to bring in money which has allowed them to join the consumer society. However, the temptations of this arrangement quickly led to the Kayapo "mining" timber from the rainforest, harvesting timber in a predatory way and forcing the government to ban the further sale of mahogany.

This case simply underlines the tragedy of a situation where indigenous groups have come into contact with the modern consumer society, absorbing those consumer values. While the Kayapo might hope to switch to a sustainable economy based on forest products, they can do so only by buying into the global trading system and with government backing.

Even the US Forest Service is adopting new approaches to managing the lands under their responsibility, based on the realization that forests indeed have multiple values. For example, a 1994 report by the Wilderness Society showed that tourism and recreation generated ten times the economic benefits of logging in five southeastern states and five times as many jobs. Under a new programme launched in 1990, Forest Service is becoming a pared-down, multi-disciplinary core staff working closely with a variety of interest groups to manage ecosystems for sustained production of a variety of ecological, social, and economic benefits. Forests are to be managed not for specific quantities of commodities or uses, but for a desired future condition that includes both ecological health and direct benefits to society. Because of the tremendous diversity of individual forests, managed by the Forest Services, the programme is not following highly specific directives on how to implement action in the field. Rather, the emphasis is on principles, goals, and standards of performance. This might be considered an appropriate vision for forest departments in other parts of the world, as they seek to provide multiple benefits to people.

Given the chance, people living in and around forests in many parts of the world promote high levels of diversity, seeking a wide variety of goods and services, rather than focusing on a few commercial species. The rural people of Malaysia, Cambodia or Siberia have little say over what happens to the forests where they live, because the timber concessions are given out in capital cities. Institutional mechanisms need to counterbalance the political-economic forces favouring exploitative use of forests.

With such mechanisms in place, the development of diverse non-timber products of benefit to local people would take on new meaning; in the absence of such mechanisms, these efforts may be premature. In many cases it may be preferable to let the marketplace function freely; while the logic of the market is not infallible, it often helps rural people more than the forest programmes created by central governments.

Of course, the faith in local communities needs to be balanced with reality, for forests achieve numerous national objectives, including meeting national needs for timber and firewood, retaining options for future economic use, addressing ethical and aesthetic values, and providing global benefits.

Thus simply ensuring that local people have access to forest resources may not always lead to socially-optimal levels of biodiversity conservation. Instead, the larger society must mobilize additional resources and approaches to support a socially desirable level of conservation effort, using a wide diversity of approaches.

Herbert Girardet/Still Pictures

Jeff McNeely is Chief Scientist with the World Conservation Union, Gland, Switzerland.

# Forests

## a planetary treasure

The decline of tropical forests represents the biggest land-use change of its scale and speed in human history. It may soon be followed by a similar decline of boreal (northern) forests. Yet, says **Norman Myers** we have scarcely begun to ask ourselves what we are losing along the way. Here he explores the real nature of this forest treasure house and tots up some of the damaging consequences of grandscale deforestation.

The value of forests lies in much more than the wood supplies they contain. Yet commercial timber and other wood products are worth well over $400 billion per year, and demand for them is expected to increase by half by 2010. Unfortunately there are signs of a timber famine ahead. Already there is a growing shortage of tropical hardwoods.

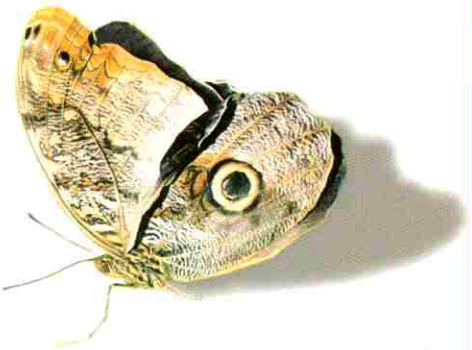
Tropical forest countries used to earn as much from timber exports as from cotton and twice as much as from rubber, but due to over-harvesting of timber these revenues are declining fast, and many major exporters have become importers.

Still more important is fuelwood for developing countries, with three billion people who depend on it for almost all their household energy. Already half of these people cannot obtain fuelwood without overcutting tree stocks, and many of them find it is as hard to heat the supper bowl as to fill it. Worse, their total is expected to rise to 2.5 billion by 2010.

Because of shortages, many rural families now spend between 1.5 and 5 hours each day collecting fuelwood.

Jany Sauvanet/Still Pictures

**Left: Emerald tree boas, French Guyana**
**Left below: Scarlet Macaws, Amazon, Brazil**
**Right: Alejuela butterfly, Costa Rica**
**Right below: Many spices come from the forest**



Robert Francis/South American Pictures

The opportunity costs of this time, which could be better spent on tilling cropfields and other productive work, is thought to be around $50 billion per year. This figure is to be compared with the cost of a comprehensive fuelwood-plantation programme, $12 billion per year - a figure often regarded as "quite impossible".

### Genetic resources

Forests are the main home of Earth's species. While covering only six per cent of the planet's land surface, tropical forests contain at least 50 per cent, possibly 70 per cent and conceivably 90 per cent of all species. Half a square kilometre of Malaysia's forests can feature as many tree and shrub species as the whole of the United States and Canada, while a single bush in Peruvian Amazonia has revealed as many ant species as in the British Isles.

When we visit our neighbourhood chemist, there is one chance in four that our purchase - whether a drug, medicinal or pharmaceutical - owes its manufacture to startpoint materials from tropical-forest plants. These products include antibiotics, antivirals, analgesics, tranquillizers, diuretics and laxatives, among many other items. The contraceptive pill has been based upon forest-plant materials from Mexico and West Africa.

Commercial sales of these diverse products are worth some $40 billion a year in the developed world, while their economic value can be several times as large. The rosy periwinkle from Madagascar has supplied alkaloids that form the basis of two potent therapies against blood cancers, with economic benefits worth at least $1 billion per year.

Tropical forests are reckoned to contain another dozen plant species with capacity to generate superstar drugs against other forms of cancer, provided the plants can be identified before they lose their habitats.

We enjoy these plant contributions to our health after pharmacologists have taken a cursory look at only one plant species in ten, and an intensive look at only one plant species in a hundred. We can surely look forward to entire pharmacopoeias of new products, provided the forests and their species survive. One of the most promising responses to AIDS could stem from a plant of Queensland's forests.

Other forms of biodiversity assist our material welfare. The most numerous forest species by a long way are insects. One might suppose that if we are losing perhaps 50 insect species in tropical forests every day, it hardly matters: what have creepy-crawlies done for us? But consider the oil-palm plantations of Peninsular Malaysia.

Until 1980, pollination of the palm trees was undertaken by human hand, an inefficient and expensive process. The plantation owners asked themselves how the palm got itself pollinated in its native habitats of Cameroon's forests. It turned out the task was performed by a tiny weevil. The plantation owners brought back a stock of weevils to Malaysia for release into the plantations, where they performed admirably, with savings reckoned at $120 million in 1981. We can thank that weevil next time we use margarine and cosmetics that may well be based on palm oil.

Wild species and their genetic resources also support agriculture. Asia's rice crop was hit in the early 1970s by a 'grassy stunt' virus that threatened to devastate 300,000 square kilometres of rice fields. Fortunately a single gene from a wild rice in an Indian forest offered resistance against the virus. In 1976 there emerged another virus, known as 'ragged stunt' disease, and again the most potent source of resistance proved to be a wild forest rice. In India alone, the introduction of wild rice strains (plus primitive cultivars) has increased yields by $75 million a year.

Many other crops - ranging from food crops such as avocado, banana, cashew, coconut, grapefruit and lemon to beverages and spices such as cacao, cinnamon, coffee, paprika and vanilla, and to industrial crops such as oil palm and rubber - depend for part of their productivity and disease resistance, on genetic infusions from wild relatives in tropical forests. Just the exports of these crops are worth well over $20 billion a year.

Sophie Boussahba/Still Pictures

### Environmental services

Now consider the environmental services supplied by forests,

WWF/Michel Roggo

Nigel Dickinson/Still Pictures

even more bountiful and valuable than material goods. Watershed services, for instance: deforestation of upland catchments can lead to disruption of hydrological systems, causing year-round water flows in downstream areas to give way to flood-and-drought regimes.

In the Ganges Valley with its 500 million smallscale farmers in India and Bangladesh, the annual costs of watershed deforestation in India alone were estimated as far back as the early 1980s at more than $1 billion. A similar decline of watershed services is becoming apparent in the densely populated valleylands of the Irrawaddy, Salween, Chao Phraya and Mekong Rivers in Southeast Asia. Some 40 per cent of developing-world farmers depend upon regular flows of rivers and streams from healthy watersheds to irrigate their croplands.

Then there is siltation of hydropower and irrigation-system reservoirs, deriving in major measure from deforestation in watersheds. The cost is estimated by the World Bank at $6 billion a year. In addition there are the soil conservation benefits of tree cover; within India's forests, these are worth between $5 billion and $12 billion per year, while the nation-wide value of forest services in regulating river flows and containing floods are roughly assessed at $72 billion a year. Perhaps most pertinent of all: what price for watershed services in the year 2025 when a full three billion people in developing countries may well be suffering water shortages?

In addition, deforestation sometimes results in reduced rainfall. In northwestern Peninsular Malaysia, the Penang and Kedah States have experienced disruption of rainfall regimes so large that 20,000 hectares of paddy ricefields have been abandoned and another 72,000 hectares have registered a marked production drop-off in this "rice bowl" of the Peninsula. Similar deforestation-associated changes in rainfall have been documented in much of the Philippines, southwestern India, montane Tanzania, southwestern Ivory Coast, northwestern Costa Rica and the Panama Canal Zone.

## Climate links

Still more important is the forests/climate linkage at global level, notably through forests' role as carbon sinks and hence their capacity to mitigate global warming. Forests currently hold some 1200 gigatonnes (billion tonnes) of carbon in their plants and soils (out of 2000 gigatonnes in all terrestrial plants and soils), by contrast with 750 gigatonnes in the atmosphere.

Nigel Dickinson/Still Pictures

**Top: Flood refugees due to deforestation**
**Above: Picking medicinal plants in Sarawak**
**Below: Collecting fuelwood in Nepal**
**Top right: Fruits of the forest, Amazon**
**Right: Cloud forest, Costa Rica**

Around half of the forest carbon is located in boreal forests, more than one third in tropical forests, and roughly one seventh in temperate forests. Boreal forests, being Earth's largest biome on land, probably contain more carbon than all the Earth's proven fossil fuel reserves. Another way to view the flywheel effect of the world's forests on carbon stocks is to note that they account for 65 per cent of net plant growth and carbon fixation on land. Just Siberia's forests absorb 10 per cent of human emissions of carbon dioxide annually.

When forests are burned - as is the case with cattle ranching and smallscale agriculture in the humid tropics and with fires both wild and human-made in the boreal zone - they release their carbon. Of the roughly 7.6 gigatonnes of carbon dioxide emitted per year into the global atmosphere and contributing almost half of greenhouse-effect processes, 1.6 gigatonnes (plus or minus 0.4 of a gigatonne) come from forest burning in the tropics, almost all the rest stemming from combustion of fossil fuels. All in all, there is a net flux from forests to the atmosphere of 0.9 of a gigatonne (plus or minus 0.4 of a gigatonne) of carbon per year.

In addition, global warming itself is expected to cause increased die-off and decomposition of forest biomass, in turn triggering a further release of carbon dioxide. As much as one third of the world's forests could be threatened in this manner.

The largest single tract is in Siberia, amounting to 5.5 million square kilometres or nearly twice as much as in Brazilian Amazonia. Its woody biomass is estimated to contain 40-60 gigatonnes of carbon (though only around half as much as in Amazonia), while its forest soils, detritus and litter contain another two or three times as much carbon (far more than in Amazonia).

Jorgen Schytte/Still Pictures

WWF/Juan Pratginestos

Since boreal forests are located in northern high latitudes where temperatures will rise most in a greenhouse-affected world, they could soon start to undergo marked desiccation and die-off, aided by the increase in forest fires expected through global warming. Were there to be progressive depletion of boreal forests, their expanse could decline by at least 40 per cent and conceivably 60 per cent within the next three to five decades.

Worse, the incipient decline of boreal forests could well lead to an increased rate of die-off in remaining forests in other parts of the world, plus a decline of biomass in other ecological zones such as grasslands. We could eventually (or even soon) face a "runaway" greenhouse effect as boreal forests decline, taking with them their crucial flywheel function in the global carbon budget.

As for economic evaluation of the stabilizing effect of forests in the global climate system, we can use a 'central' value of $20 of global-warming damage for every tonne of carbon released. On this base, carbon storage offers a far higher rate of return than any alternative form of current land use in tropical forests. Alternatively reckoned, to replace the carbon storage function of tropical forests (never mind temperate and boreal forests) could cost as much as $3.7 trillion.

The biggest calculation remains unassessed. If, in fifty years' time, the Earth is largely bereft of its forests, how shall we respond to those descendants who ask how we could afford to watch the terminal reduction of what has been the predominant type of vegetation on the Earth for hundreds of millions of years? Will they not rather ask, "How could you not afford to save the forests in light of all that has been ultimately and irretrievably lost?"

Norman Myers is a Fellow of Green College, Oxford, and a contributing Editor of *People & the Planet*.

Philippe Revelli/Still Pictures

# factfile

## Shrinking forest

The World Forest Map (below) is the first digital map showing the actual global forest extent and protected areas with forested land.

Compiled from more than 70 recent sources it is the first attempt by the World Conservation Monitoring Centre in Cambridge, England, to do this.

The map shows that only six per cent of the world's forest is formally protected, of which mangroves are best protected (9 per cent). This is followed by tropical moist forest (8 per cent), temperate broadleaf and mixed forest (6 per cent), tropical dry and temperate needleleaf forest (5 per cent).

However the quality of protection varies widely and much of the tropical moist and mangrove forests are protected more in theory than in practice. WWF argues that the quality of protection needs to be improved as well as the extent.

Globally there are 21.1 million sq km of temperate forest and 12 million sq km of tropical forest. Mangroves cover 0.2 million sq kms.

Nearly 17 million hectares of tropical rainforest disappears each year as a result of deforestation - or about one per cent of the total - to be replaced by farming or pasture. The area of old-growth temperate forest has largely been replaced with managed plantations, which are less valuable for wildlife and the environment.

## Green World

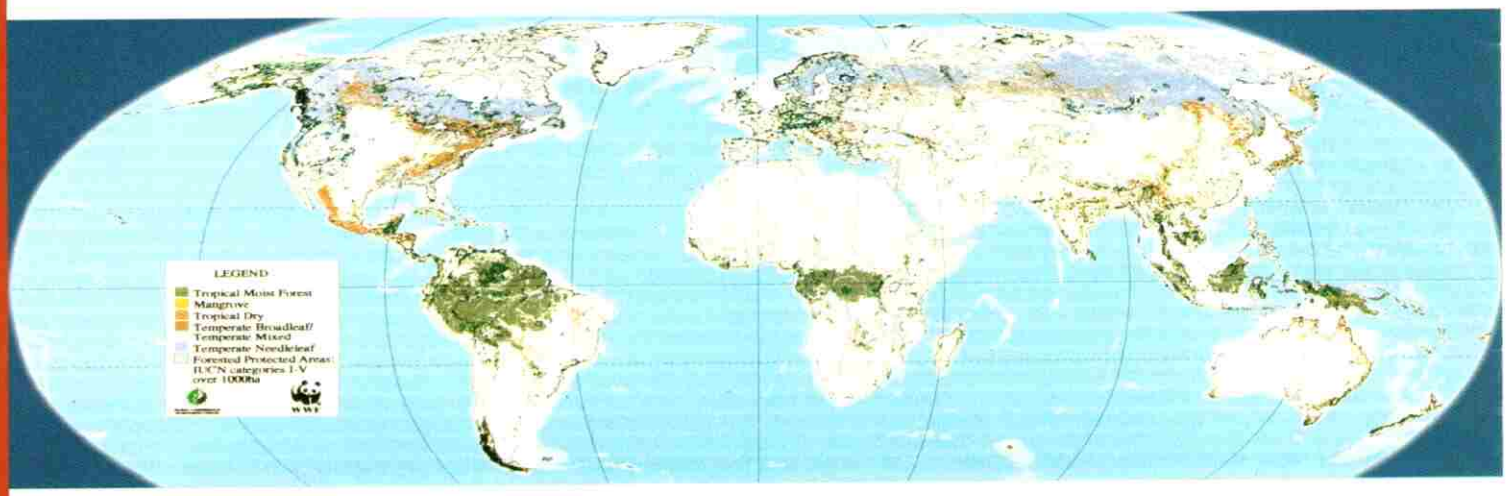
Some of the destruction is highlighted in 24 Green World radio programmes prepared by the BBC World Service for transmission in 22 languages over the next five months. These include reports on:

The loss by India of 1.5 million hectares of forest every year, with many Himalayan slopes losing their trees through excessive farming and logging.

The activities of oil companies in Ecuador which are damaging traditional Indian agriculture.

The loss of over 135,000 hectares of forest in Vietnam in the last five years.

The illegal export of timber from Afghanistan which is losing 20,000 hectares of forest annually.




### Forests for Life: a WWF campaign

The World Wide Fund for Nature (WWF) is launching its three-year strategy Forests for Life, as the world's forests are being cleared and degraded faster than ever before.

For the past ten years there has been increasing concern about the state of the world's tropical forests. But until very recently, little information existed about the state of the world's temperate and boreal (northern) forests. WWF research has revealed that there is an even more serious and rapid decrease in forest quality in those forests.

Satellite images of the world's forests today show that the spread and the rate of degradation and deforestation in boreal regions - Canada, the Arctic, Siberia - has increased rapidly.

WWF research also shows that despite the efforts of governments, communities and conservation groups, only six per cent of the world's forests are formally protected. However, many so-called 'protected areas' are now treeless. Illegal logging, overgrazing and agricultural encroachment all take their toll, with no intergovernmental process taking sufficient action to slow the rate.

For the past 30 years WWF has been working to halt - and eventually reverse the loss of the world's forests. Now the WWF Forests for Life Campaign is setting two further targets:

- The establishment of an ecologically representative network of protected areas that will cover a minimum of ten per cent of the world's forests area, by the year 2000. In short, this commitment requires the doubling of the world's forests protected areas in the next five years.
- The independent certification of ten million hectares of forest which are being sustainably managed by 1998. WWF already supports independent certification for forests, now it will be lobbying within the European Union and national governments worldwide to rally support for the Forest Stewardship Council.

WWF will be focusing its efforts to achieve these targets over the next few years.

*Documentation on WWF's forest policies is available from Francis Sullivan, WWF Forests for Life Campaign, WWF-UK, Weyside Park, Godalming, Surrey, GU7 1XR, UK.*

# Global action

Peter Solness / EPL

**Jean-Paul Jeanrenaud** reviews the major international efforts developed over the past decade to save the world's forests.

Fears about the future of the world's forests have resulted in the creation of a powerful non-governmental movement interested in safeguarding natural and old-growth forests around the world.

Increasingly the focus on the protection of biodiversity and the ecological functions of forests is linked to safeguarding the livelihoods of local and indigenous peoples.

Largely as a result of NGO pressure and public action, there has been a range of official attempts to address what many are beginning to recognize as a 'global forest crisis'. Some of the major initiatives are:

The United Nations Conference on Environment and Development (UNCED), also known as the 'Earth Summit' which gave birth to the Commission on Sustainable Development (CSD) and the Intergovernmental Panel on Forests (IPF).

The UN Food and Agricultural Organization's (FAO) Tropical Forestry Action Programme (TFAP).

The International Tropical Timber Agreement (ITTA) which led to the establishment of the International Tropical Timber Organization (ITTO). The Forest Stewardship Council (FSC).

## After Rio

UNCED took place in Rio de Janeiro in June 1992 with the aim of decisively tackling the related problems of the environment and development. In the event, the results have been mediocre and several apparent gains for the environment have since been eroded.

The proposal for a global Forest Convention was rejected and replaced by a chapter on deforestation in Agenda 21 and a Non-Legally Binding Statement of Principles for a Global Agreement on the Management, Conservation and Sustainable Development of All Types of Forests - usually called the 'Forest Principles'.

Widespread ratification (140 countries) of the Convention on Biological Diversity gave some cause for optimism but there has been a subsequent watering down of the Convention with attempts to introduce a forest protocol being resisted by most governments.

The CSD held a major meeting which dealt with forests in April 1995. This failed to reach any agreement on priorities for action and instead set up a two-year Intergovernmental Panel on Forests (IPF) to explore forest-related problems in more detail. NGOs are particularly concerned that biodiversity is not given special attention under the IPF.

## Action plan

FAO established the TFAP in 1985 in partnership with UNDP, The World Bank and World Resources Institute. Its aims were to promote improved management and use of forests, including raising US$8 billion for tropical forest conservation, setting up national forestry action plans, and providing an effective international umbrella organization for donor agencies.

Unfortunately, the aims have not been achieved and the TFAP has been accused of encouraging timber production in primary forests. In Cameroon for example, the National Forestry Action Plan has encouraged exploitation of the last areas of primary rainforest in the south and east of the country.

In 1990, WWF concluded that: "TFAP has failed to provide consistent guidance and leadership to national governments in their tropical forests...And it has failed to convince local groups and NGOs that it offers realistic solutions in the long-term."

## Timber trade

There is confusion about whether ITTO's main role is to promote or regulate the tropical timber trade. Following pressure from NGOs, ITTO set a target for all internationally traded tropical timber to come from sustainably managed forests by the Year 2000 and has established guidelines and criteria for sustainable tropical forest management.

However, it has failed to achieve its own policies and in 1991 WWF concluded that: "Regrettably, many ongoing ITTO projects must be regarded as subsidised logging..." During the renegotiation of the Agreement in 1993, NGOs and some tropical country governments suggested expanding the scope of the Agreement to include temperate and boreal timber as well. This was strongly rejected by Northern 'consumer' countries, which almost brought the negotiations to a halt. The ITTA which was finally renegotiated in January 1991, has like the original, no environmental controls.

## Forest council

One of the few international initiatives that enjoys the support of WWF, Greenpeace, Friends of the Earth and a wide range of other NGOs is the Forest Stewardship Council (FSC). The FSC is a wholly independent, non profit-making, non-governmental, membership organization, founded by representatives from environmental groups, foresters, indigenous people, community forestry groups, forest product certification organizations, and timber traders from 25 countries.

The FSC seeks to promote good forest management worldwide, based on a set of Principles and Criteria designed to ensure that forests of all kinds are managed in ways that are:

Environmentally appropriate

Socially beneficial

Economically viable

FSC

To encourage good forest management the FSC will evaluate, accredit and monitor certification organizations which inspect forest operations and provide certificates and labels verifying that wood products have been sustainably produced. The FSC trade mark on a product indicates that the wood has come from a well managed forest.

Jean-Paul Jeanrenaud is Head of WWF's International's Forest Programme, in Gland, Switzerland. His article was adapted from *Forests for Life*, by Nigel Dudley, Don Gilmour and Jean-Paul Jeanrenaud. This WWF/IUCN forest policy book was published by WWF-UK in 1996 and is available from WWF International, Avenue du Mont Blanc, CH-1196 Gland, Switzerland.

World Conservation Monitoring Centre

# Special Report:

# Brazil's new forests bring profit and pain

One Brazilian company - Aracruz - is the world's largest exporter of hard wood pulp. The eucalyptus plantations it controls cover huge areas of the country, including trees grown by small farmers. **Cristina Cavalcanti** went to investigate.

The very name Brazil, conjures up images of dense tropical forests with an impressive diversity of plants and animals. Since the mid-1960s, however, a new kind of forest has been spreading over 1.5 million hectares (ha) around the country. In the Southeast region alone, the pulp industry's eucalyptus plantations cover more than 550,000 ha.

The biggest company involved is Aracruz Celulose, the largest exporter of hardwood bleached pulp in the world. With 203,000 ha, of which 132,000 ha are plantations, Aracruz encompasses 18 towns in the states of Espirito Santo and Bahia. The company's properties, together with its Forestry Farmers Programme, covers an area of 155,000 ha of eucalyptus and 73 towns in three states.

Aracruz's biotechnology laboratory has developed more than 100 eucalyptus clones from two species, *Eucalyptus Grandis* and *Eucalyptus Urophylla*. Reproduction is done using cuttings from the mother tree, preserving its genetic potential. Clones grow two centimetres a day during the first two years and are ready for use in seven years, when they reach 35 metres. Each tree produces three crops each hectare produces 45 cubic metres of wood. The company's greenhouses produce 40 million seedlings a year and its laboratories have developed in vitro hybrid seeds for export.

As a result, Aracruz produces 23 per cent of the world's pulp. The sheer volume of wood produced now exceeds the capacity of the mills to pulp it, generating a wood surplus. Thus, the company has signed contracts with a European country to provide 960,000 cubic metres of wood in the years 1996-1999.

Aracruz's plantations are a peculiar example of how biodiversity can be used to improve biotechnology's products. To help control pests, Aracruz keeps 56,000 ha of fragments of the Atlantic Forest interspersed amongst the plantation. The mosaic of native forest guarantees the genetic purity of clones and contributes to the creation of an underbush in the plantation. A company's newsletter states: "Attacks of insects in the eucalyptus have been controlled by biodiversity, meaning that human intervention has been reduced to a minimum."

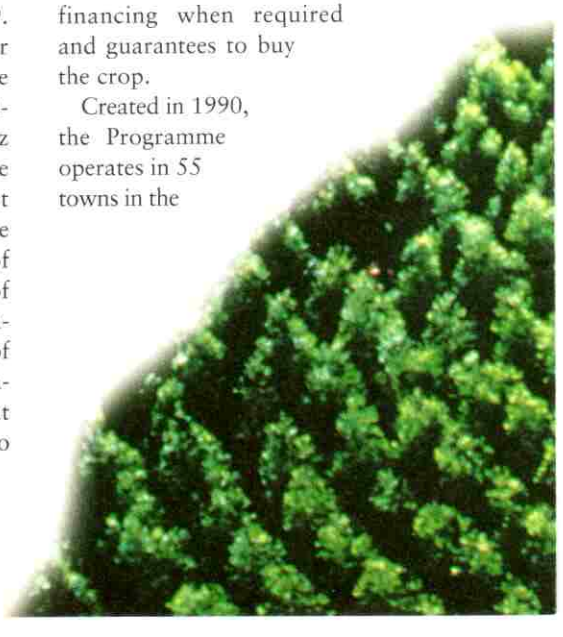
In 1995, WWF evaluated the fragments of Atlantic forest in Aracruz properties. Its report recommends, among other things, that the company should create intermediate protection zones to prevent the sharp transition from the native vegetation to the homogeneous plantation areas, thus reducing the border effect, which exposes the margins of fragmented forests to air currents, solar radiation and the invasion of organisms foreign to the environment.

## Forestry farms

Espirito Santo is one of the smallest states in Brazil, and its rural properties are small, with an average of 60 ha. Nevertheless, the state does not have an effective agricultural policy. This has contributed to the wide acceptance of Aracruz's Forestry Farmers Programme among small farmers.

By the end of the 1980s, having bought almost 2 per cent of the state's land, Aracruz was prohibited from expanding its territory further. To compensate for this limitation, it created the Forestry Farmers Programme, which provides farmers with eucalyptus seedlings, technical assistance, fertilizers and pesticides, offers financing when required and guarantees to buy the crop.

Created in 1990, the Programme operates in 55 towns in the



Aracruz

**Left: Portocel port ships pulp worldwide**
**Below: Aracruz's eucalyptus plantations**

states of Espirito Santo and Minas Gerais, covering an area of 19,000 ha. In six years, 2,100 farmers have joined the scheme and in 1995 alone, 2.4 million seedlings were distributed and planted. But for the farmers, profits are small. The first crop from the programme will be harvested in 1996. Hiram Bezerra, Manager of Alternative Wood Supply, puts the farmer's income from selling 30 cubic metres of wood per ha at around US$ 88 a year.

Carlos Alberto Roxo, Manager of Corporate Quality and Public Affairs, recognises that the farmers' wood is not essential for pulp production any more. Its main function is strategic, what Bezerra calls 'the creation of a regional wood market', which the company hopes to stimulate 'through the generation of an alternative income for the farmer.'

Sandra Faillace, a consultant in forestry certification, says the 1990s have seen large pulp companies responding to international pressure for greater environmental responsibility. Through forestry-farmers programmes, she says the industry reduces its production costs and evades social pressures and public control over production. This would explain why Hiram Bezerra considers profitable the programme's productivity, of 30 to 35 cubic metres a year, against 45 cubic metres a year reached at the company's own plantation.

To obtain a license from the Secretary of Sustainable Development of Espirito Santo (SDS), Aracruz has to comply with its environment code. According to the SDS, eucalyptus plantations should not cover more than 50 per cent of a farmer's land. It prohibits planting on certain sites, such as the top and steep slopes of mountains and hills and alongside river margins and water springs. Moreover, 3 per cent of all seedlings distributed should be of native species, with the aim of recovering degraded areas. Bezerra says most farmers refuse native seedlings. For this reason, Aracruz has included a clause in the contract by which the farmer formally refuses them and the company is released from providing them.

In its evaluation report, WWF points out the need to monitor the number of seedlings distributed in relation to the number of seedlings effectively planted. It also says it is necessary to create incentives so that farmers may engage in forestry rehabilitation. Hiram Bezerra says that seedlings, refused by farmers, are transferred to the Forest Rehabilitation Extension Programme. Created in 1986 by the state government, it intends to integrate eucalyptus into the everyday economic life of the region and to regenerate native species. However, although it has distributed 48 million eucalyptus seedlings in the last ten years only 1.7 million seedlings of native species have been distributed among farmers.

Meanwhile, Aracruz is working hard to upgrade the international certification of its products, specifically the ISO 14001 certificate for its environmental management. The programme of environmental management is inspired by ISO 14031 standards and takes into account some of the standards laid down by the Forestry Stewardship Council (FSC).

Ana Fanzeres, who has coordinated Greenpeace's forest campaign, says this does represent a step ahead, since the 14001 recipient is bound to allow public access to information on its forestry management.

Aracruz has been under attack since its inception in 1967. Environmentalists are concerned at the impact of an extensive monoculture on the remains of the Atlantic Forest, which holds second place in the world ranking of biodiversity.

There is also concern over the social and cultural impact of the plantation, particularly on the indigenous peoples of the region. Aracruz has bought land in an Indian reservation of the Tupinikim and Guarani tribes, which they are fighting to recover.

To improve relations with its Indian neighbours, Aracruz takes part in the Inter-institutional Nucleus of Indigenous Health (NISI), which includes representatives from the federal, state and city governments, members of Catholic missions and eight Indians elected by their villages. NISI works on health, agriculture and education. Aracruz co-operates

Aracruz

Aracruz

with the agricultural commission, that offers technical assistance to the planting of commercial crops such as coffee, beans and pineapple, as well as subsistence crops such as corn, manioc and rice.

The economic benefits of this are considerable. Independent experts expect that the 2,000 coffee seedlings per family that have been planted by the community will bring each family around three minimum salaries a month, or US$ 300.

Aracruz's own productivity is very high. The 1.7 million tons of pulp produced in 1995 consumed only four cubic metres of wood per ton. In the same year, the company produced 346 tons per employee. A closed industrial system where plantation, mill and port are integrated minimizes costs. According to Alberto Carvalho de Oliveira Filho, Environmental and Industrial Safety Manager, Aracruz's production cost of one ton of standard chlorine bleached pulp is US$ 289.

The company has also launched a modernization programme which will improve its environmental impact. Oliveira Filho says that by 1997 it will reuse 30 per cent of the water consumed by the mills. It will reduce the emission of dust particles by a quarter and will improve the control of odours. Elemental chlorine will be substituted by chlorine dioxide in the ECF (elemental chlorine free) system. The company already produces 100 tons of TCF (total chlorine free) pulp a year, as demanded by European countries. Germany, for example, buys exclusively TCF pulp.

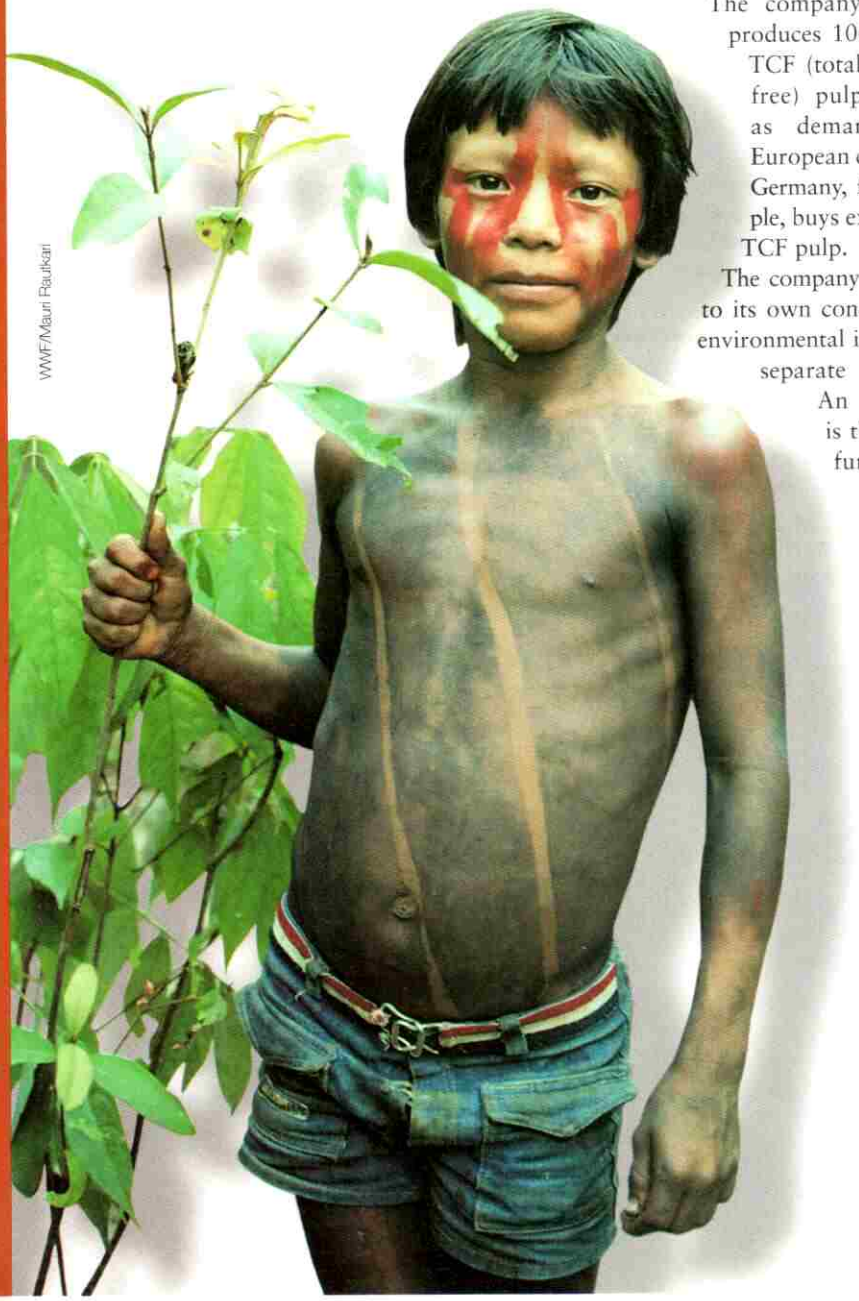
The company responds to its own concern over environmental issues in a separate scheme. An example is the partial funding of the government's Tamar Project, that protects the reproductive cycle of five species of sea turtles. But this is also a response to incentives created by the Brazilian government which, sensitive to market demands, has offered credit for the implementation and modernization of environmental control systems in Brazilian industries.

So what is the verdict on Aracruz Celulose?

Heloisa Dias, consultant to the state-controlled Espirito Santo Sanitation Company, comments on the social impact of the company. Before it was created, she says, Espirito Santo did not have a dynamic economy, but was able to guarantee stable employment and had the potential to create a diverse agro-industrial economy. The state financial resources employed in the establishment of a closed industrial complex such as Aracruz's generate few economic benefits, since the company does not demand goods and services of economical relevance from nearby towns.

At the same time, says Dias, work relations are precarious, mainly in companies that offer services to Aracruz, such as tree cutting and transport. And she asks: "it's true that over the years Aracruz has improved its environmental management, but who will pay for the costs of its long lasting social, economic and environmental impact?"

Cristina Cavalcanti is an anthropologist and freelance journalist based in Rio de Janeiro.



WWF/Mauri Paulkari

**Above & below: Aracruz developments**
**Left: Amazonian Indians use forest plants for medicine**

Aracruz

## Struggle for the Indian Amazon

Throughout the Amazon region, small and apparently powerless indigenous groups have in recent years forced government recognition of their land rights and in many cases halted destructive development of their lands - expansion of cattle ranching, illegal logging, goldmining, and the construction of large hydroelectric plants. While pressures on Indian lands are great, the trend over the last 30 years has been for the indigenous population to grow, for Indians to gain official recognition of their land rights, and for notions of sustainable resource management to move from concepts into practice.

By official statistics, Indians in Brazil number 326,000, speak some 170 languages and live in 554 areas, covering around 947,000 square kilometres. This is an area two and a half times the size of Germany, some 98 per cent of which is in the Amazon region.

Somewhat less than half of this land is fully legally demarcated (the process of official recognition of Indian land rights guaranteed in the 1988 Constitution), but the large majority of these lands have some degree of official recognition. Thirty years ago, when the government Indian agency (FUNAI) was created, virtually none of this land was recognized as Indian land by the government.

The future of the indigenous lands of the Amazon is central to the future of the largest remaining expanse of tropical forest in the world. Indigenous groups have constitutionally guaranteed rights to about 18 per cent of the area of the Brazilian Amazon. This is by far the largest expanse of the existing protected area, covering about three times more land than all types of conservation units together.

Some traditionally oriented conservationists, however, have argued more recently that indigenous land protection is an inadequate means of protection of biological diversity. They argue that the first priority for protection of biological diversity should be the creation of parks in the most isolated possible areas.

The logic ignores the critical role of indigenous areas in effectively protecting large expanses of forest on the development frontier where actual pressure for deforestation exists. Even the seemingly worst cases (such as the Kayapo) represent major environmental gains since the advance of deforestation has been checked, and in other instances (as in the Xingu Park) ranching and deforestation have been checked and loggers and miners have been kept out as well.

Even more important, policy for protected areas is being defined through the conflicts among opposed interests on the frontier or in already developed regions, not in isolated regions with no means of access. To abandon the defence of indigenous lands as a strategy for protection of biological diversity in favour of isolated and uninhabited parks is at best to put off the day of reckoning, and to ensure that when it comes the damage will be worse.

The challenge, however, is to put indigenous areas on an ecologically and economically sustainable footing. With new needs, and relatively restricted space compared to a few decades ago even in the largest Indian areas, indigenous groups, like other forest peoples, must develop sustainable resource use strategies if their lands are to be viable over the long run.

Various non-governmental organizations - the Instituto Socioambiental, IMAZON, IPHAE, PESACRE, and the Woods Hole Research Center - are developing alternatives for these areas, as well as for rural populations of the Amazon more broadly, and training researchers and technicians to work with forest communities. The juncture of traditional and scientific knowledge at which these groups work may prove the critical front in the battle for the conservation of the Amazon.

Stephan Schwartzman is on the staff of the Environmental Defence Fund/Instituto Socioambiental, in Brasilia.

WWF/Phillips/Wilkin

# People of the Monkey Puzzle

Majestic monkey puzzle (Araucaria araucana) trees once formed vast native forests in southern Chile, *writes Anna Lewington*. After more than a century of felling by logging companies just two small populations of the trees survive: one along the coastal mountains and the other spanning the volcanic border between Chile and Argentina. Monkey puzzles are found only between latitudes 38 and 40 south and between altitudes of 1,000 - 2,000 metres.

To the Pehuenche Indians of south central Chile, who take their name from them, these trees have always been sacred, and their nutritious seeds form the basis of their traditional diet. The Pehuenche have been battling for many years to protect their forests. After the Chilean government acquiesced to pressure from the timber industry in 1987, allowing the formerly protected trees to be clear-felled, the Melinir family of Quinquen took decisive action. With the help of the Chilean conservation organization CODEFF, a campaign to protect the remaining monkey puzzle forests was staged.

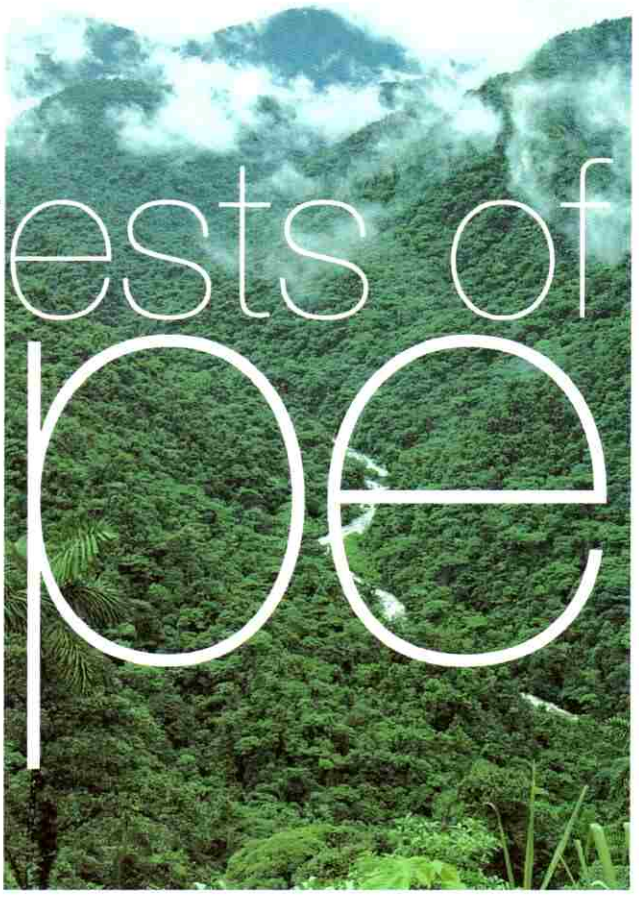
In 1990, the government announced a moratorium on logging and made monkey puzzles "national monuments" once more. However, the government then gave half the Melinir's traditional lands to a logging company that falsely claimed the area and decided that the rest would become a national reserve. Sadly, for the Pehuenche, this does not rule out future logging activity.

Monkey puzzles are currently classified as "rare" on the red Data List of threatened plant and animal species and are on Appendix 1 of the Convention of International Trade in Endangered Species, prohibiting any international trade.

Anna Lewington is a freelance writer specialising in the peoples and environments of South America. Her publications include, *Plants for People*, *Antonio's Rainforest* and *The Atlas of Rainforests*.

All photographs: Edward Parker

# Forests of Hope



Dr Nigel Smith/The Hutchison Library

**Christian Küchli** introduces our reports from around the world on people-centred successes in caring for the forest.

In the mid-1980s things looked bleak for the world's forests. In Europe and North America, tree damage appeared which could only be explained by the effects of fossil fuel emissions. The greed of logging companies and slash and burn farmers in their wake ate deep into the tropical rainforests.

Reactions to the demise of the forests - the prime symbol of ecological decline - ranged from feelings of weary powerlessness to diffuse cynicism.

In 1984, I had the good fortune to meet Sunderlal Bahuguna, the charismatic leader of the Chipko Movement, which arose in the 1970s to protect the Himalayan forests. It struck me that there must be similar personalities and popular movements wherever forests are in danger. What I saw when I travelled to the Himalayas encouraged me to extend my search for hope and the conditions of hope.

Everywhere I met women and men who look after their trees and forests so that they can hand them on intact to their children. The work of the National Rubber Tappers' Council in the Brazilian Amazon is one example, the Project of Ecological Recovery in Thailand and the Chagga farmers of Tanzania described on pages 20-21, are others. But often other parts of the forest quite close to these well-maintained islands are less carefully treated.

When I sought an explanation for this situation I came across the same causes over and over again. Where there are conflicts over forest resources, either within the local population or between them and the forestry management, which on the whole represents the interests of urban and industrialized people - the trees suffer.

Whether trees thrive or suffer depends ultimately on the empowerment and influence of the local population. Who does the forest belong to? Who has effective control over it? Who profits from the effectiveness of the forestry management service? These are questions which go to the heart of the causes of forest destruction.

Where trees have vanished in recent years, whether in Amazonia, Siberia, Borneo or West Africa, this has occurred above all in the name of profit, or of that other equally magical and hollow concept, 'development'. Of course there were and are cases where the underprivileged have no other choice but to grow their crops in the ashes of felled trees.

But such destruction is not inevitable. Where large tracts of forest go up in flames, injustice is normally the match that lights it. Where five per cent of the population owns 80 per cent of the arable land, as in Brazil, it must lead to the oppression of large sections of the population, whether in city *favelas* (shanty towns) or on the fringe of the remaining forests. 'To be or not to be' for the forests is fundamentally a question of justice.

My personal hopes for the forest derive from two sources. First is the local resistance springing up everywhere against the rapid exploitation of forests by outsiders. Success depends on support from groups in the civil society like non-governmental organizations, who support the local population in asserting their rights.

Second, and a symbol of hope in itself, is the natural ability of forest vegetation to regenerate through reseeding and coppicing. Just how powerful this regeneration ability is can be seen in the largely spontaneous renewal of forest cover in Central Europe in the last one and a half centuries.

The use of coal and the industrialization process of the last century had a socially levelling effect in the region and contributed decisively to the resolution of fundamental conflicts over the forests.

Changes will also be necessary in the South, to benefit the whole of society: these countries also have the right to technologies and the energy to use them, so that their natural resources can have the chance to recover.

But will the energy-intensive Northern model of industrialization and consumer culture be the right one for the South? As the far-sighted Mahatma Gandhi once said: "If England had to plunder half the world in order to become what it is, how many worlds would India need?" This is the big challenge for the self-styled 'developed' countries: to evolve lifestyles which everyone can adopt without destroying the natural environment.

Christian Küchli is a forest scientist based in Switzerland and author of *Forests of Hope* to be published in German in 1997 by Buchvelag Nene Zürcher Zeitung. An English version will follow.

Herbert Girardet/Still Pictures

# Tanzania: a secon

The 'tree gardens' of the Chagga people of Mount Kilimanjaro provide an inspiring model of how tropical rainforests can be sustainably managed. Here **Christian Küchli** describes what makes the economic system of the Chagga so successful, despite growing numbers.

The Chagga are a mixture of different ethnic groups who settled on Kilimanjaro over the course of time. Even Swahili traders, a coastal people of mixed African and Arabic origin, sometimes decided to settle on the great mountain. All groups brought their specific domestic plants with them. The Swahili played a particularly significant role as importers of maize, cassava, sweet potatoes and other South American plants, to which they had been introduced by contact with the Portuguese as early as the sixteenth century.

This rich mixture of domestic plants eventually inspired a form of land use known as *vihamba*, multi-story tree gardens characterized by their great diversity, giving visitors the impression of being in the Garden of Eden. *Vihamba* originated on patches of forest land where useful species remained standing, while other parts of the natural forest were gradually replaced by cultivated plants from Chagga nurseries.

Irrigation is another special feature of this cultural landscape. Long before the colonial period, the Chagga tapped the water in steep, remote gorges, digging canals and hollowing out tree trunks to conduct it to settlements on mountain ridges. This provided them not only with drinking water, but with water for domestic cattle. Cattle dung in turn, was available and used efficiently to fertilize crops in the tree gardens.

As early as 1885, a packet of coffee seeds from the island of Réunion arrived at the mission in Kilema. Within the space of a few years, the Chagga were successfully growing coffee as a cash crop. By 1925 they had integrated well over one million shade tolerant coffee bushes into their *vihambas*, and 20 years later the Kilimanjaro Native Co-operative Union had grown to include almost 30,000 members. Many Chagga became involved in trading and transporting their products. Those who were literate soon found jobs in the colonial administration. Even today, many of Tanzania's political and business leaders are still from Kilimanjaro.

Between 1940 and 1980 the population grew steadily at around 3 per cent annually, thereby doubling every 20 years. In time, however, the highly innovative Chagga succeeded in striking a balance between population density and land use. Increased productivity in the *vihamba* was decisive.

The Chagga have become masters at combining many types of plants which not only require different amounts of light but also have roots of varying depths. For example, *yams*, a liana with starchy nodules, tolerate the shade of neighbouring trees, and also need the

# d garden of Eden

trunks of these trees as climbing supports. Even root nodules growing close to the trunks of trees with deep root systems are able to obtain sufficient nutrients. Today, a Chagga farmer cultivates up to 60 different species of trees - and often many different varieties - on an area the size of a soccer field.

Chagga women and children attend to domestic needs, including production of food, fodder and fuelwood, while the men are concerned with the realms of alcohol and money, or more specifically the production of banana, beer and coffee. Income from coffee is used for school fees and is also invested in homes and farms.

The tree gardens produce considerable yields. In regions inhabited by the Chagga, where the average per capita income is considerably higher than the national average, coffee is the main source of income. In recent years coffee has been Tanzania's most important export.

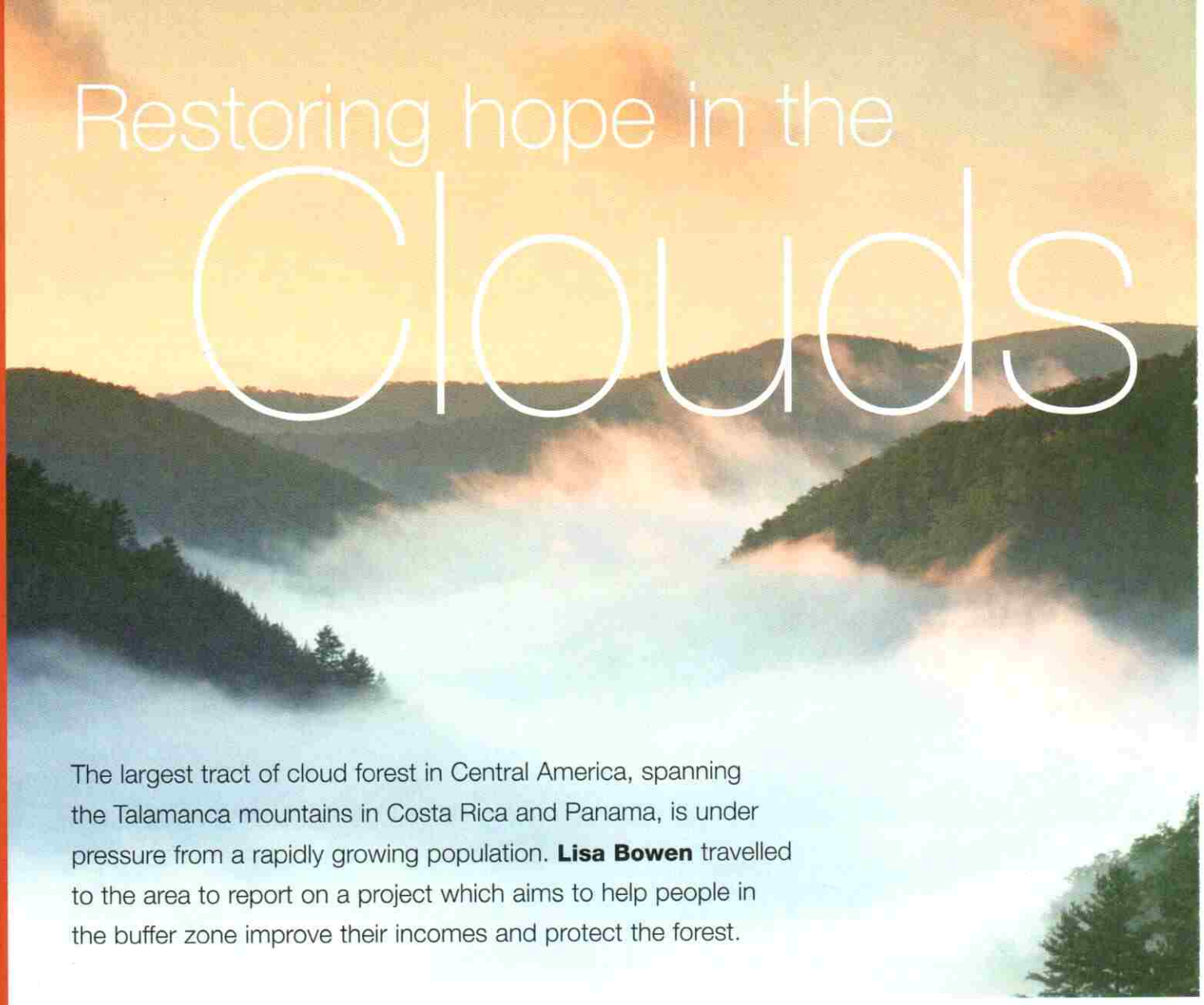
More difficult to quantify, but certainly of great value, are the many different products grown in the *vihamba* for home consumption or for local markets, including fuelwood used for cooking. One hectare is usually sufficient to supply a large family with fuelwood and timber. Women on Kilimanjaro need only a little longer than two hours per week to gather enough fuelwood for their families - much less than in other parts of Tanzania.

One of the most intriguing aspects of tree gardens is the way in which they spread risk by balancing food crops and cash crops. The fluctuating prices of coffee on the world market taught the Chagga at an early stage not to concentrate exclusively on coffee as a source of income. This is why bananas and other products which ensure basic subsistence never disappear from tree gardens even when coffee prices are high, despite the occasional recommendations to the contrary issued by the government-run coffee research station in Lyamangu.

As soon as the price of coffee drops below a certain level, the coffee plants are no longer fertilized, and the rust-fungus which grows on them is no longer treated with expensive fungicides. At this point *yams* and *taro* are dug up from 'storage'. Thus the Chagga system of resource use is not only ecologically but also economically sound.

The Chagga have developed the *vihamba* into a complex agroforestry system which is without parallel. Many experts believe the tree gardens could be the starting point for an improved form of land use in tropical ecosystems - for example, in the rain forests of Costa Rica, Indonesia or Brazil.

# Restoring hope in the Clouds



The largest tract of cloud forest in Central America, spanning the Talamanca mountains in Costa Rica and Panama, is under pressure from a rapidly growing population. **Lisa Bowen** travelled to the area to report on a project which aims to help people in the buffer zone improve their incomes and protect the forest.

Tenaura de Ortega keeps her eyes fixed on a piece of wood she is carving. Loud buzzing from an electric drill drowns out the sound of footsteps and a greeting. It's not until she is tapped on the shoulder that Tenaura breaks her concentration to look up. She smiles shyly, and offers a tour of the small workshop, where about a dozen women are at work over a single long table in the centre of the room. They are intent on learning how to create designs on wooden plaques to sell in a local artists' co-operative.

The handicrafts course opens up new economic opportunities to the women of Cerro Punta, a small village in the mist-covered mountains of Panama just outside La Amistad Biosphere Reserve. The reserve spans the Talamanca Mountains from western Panama into southern Costa Rica. Covering 2.7 million acres, much of the area is undisturbed rain forest including the largest tract of high-elevation cloud forest in Central America. La Amistad's natural riches include 10,000 higher plant species, 400 bird species, 250 reptile and amphibian species and six species of tropical cats, including the jaguar. More than a third of La Amistad's plant species are found nowhere else on earth.

The communities of Cerro Punta, Panama, and San Rafael, Costa Rica are

sites for a project designed to protect La Amistad's rain forest habitat while helping local people improve their standard of living. Called AMISCONDE - combining Amistad (friendship), Conservation and Development - the project is sponsored by Conservation International, Clemson University, Texas A&M University, and McDonald's Corporation. Locally, it is co-ordinated by the Fundacion para el Desarrollo Sostenible in Panama and the Tropical Science Centre in Costa Rica.

A rugged terrain and heavy rainfall once discouraged colonization of the Talamanca region, but today the population is growing rapidly and already numbers more than one million. Agriculture is the chief source of income for the region. In Panama, for example, the area produces 80 per cent of the vegetables consumed in the country. Yet while most farmers have only small, subsistence plots, the combined environmental impact is enormous. Fragile soils, heavy rainfall and steep slopes lead to quick exhaustion of crop and pasture lands, and farmers abandon degraded plots to clear new ones from the forest.

Through agriculture, forestry, animal husbandry, environmental education and community development, AMISCONDE aims to restore degraded lands in the

reserve's buffer zone and prevent encroachment into the reserve's forest. The five-year programme covers some 33,600 acres in Costa Rica and Panama. This includes most of the watershed area in the buffer zone where agriculture is taking place, potentially reaching more than half the population, or some 8,500 people.

Because agriculture is the primary economic activity in La Amistad's buffer zone, the project's main focus is to help farmers improve the productivity and marketability of their crops while reducing negative impacts. About 120 farmers receive technical assistance directly from AMISCONDE, and many more are indirectly assisted by learning new techniques from other farmers. Soil conservation and reforestation are taking place on several hundred acres surrounding the reserve, and an estimated 7,000 acres are recovering as second growth forest as a result of forest fire control in the region.

"Involving the local people from the start of the project and ensuring that their needs are addressed is the guiding principle of AMISCONDE's efforts," explains Manuel Ramirez, In-Country Director for Conservation International's Costa Rica and Panama Programmes. "The approach is to provide long-term rather than short-term incentives for conservation. Participants receive agricultural credits, which must be repaid, creating a sense of ownership and promoting long-term success. And, AMISCONDE's emphasis is on the entire family - not just farmers - with both women's and youth groups eligible for credits as well as other project benefits."

It was with the support of AMISCONDE that Tenaura de Ortega helped organize and now serves as president of Conservacionistas de Cerro Punta, a local women's group with 28 members, ages 18 to 60.

"The group works to provide something to the community. It's not just for women, but for the well-being of the entire community," says Tenaura, 49, whose husband, a local farmer, participates in AMISCONDE's soil conservation programme.

"In the beginning with AMISCONDE, it seemed that all the projects were on the hills, with the farmers. The needs of the women are also economic, to learn something to improve their well-being," she explains. "There is also a social need to unite the community, and an educational need."

Training courses offered through AMISCONDE have included basic accounting, food preservation, first aid, arts and crafts, sewing, community organization, natural resources management and ecotourism. AMISCONDE has supported the creation of 35 community groups in Panama and Costa Rica, including farmers' associations, women's groups and youth organizations. The project sponsors environmental education programmes in all of the 12 primary and secondary schools in the area, and works with organized community groups to strengthen these goals.

"Before AMISCONDE, other agencies might have provided training, but now there is an integrated vision," Tenaura says. "Before, some people might have received training and gone home, with nothing to give back to the community."

Giving something back to the community is how 18-year-old Omayra Arauz describes her participation in AMISCONDE's efforts.

Bright red flowers border the narrow walkway to the modest wooden house in the community of Los Nubes (The Clouds), where Omayra lives with her mother, father, brother and sister. Vibrant gardens brighten the entire community, providing a small source of income for the struggling families, many living in tiny huts of only one or two rooms.

"Before AMISCONDE, people would throw trash in the street, and nobody seemed to care. When AMISCONDE arrived, we started to wake up and to think about what is happening and how important it is to keep the community clean," Omayra says. "Before, if we needed wood, we would go and cut a tree, without thinking. Now, if we cut a tree, we think of whether we really need to, and about replanting another one."

Omayra leads the youth group, Compañeras del Parque La Amistad, with 12 members ranging in age from 14 to 20 years old.

"Through community development, AMISCONDE has allowed women and children to escape a repressive cycle and blossom into productive leaders of their communities," says Ramirez. "Women who have spent most of their adult lives in smoky kitchens are now learning ways to earn money and gain independence. Young people are more enthusiastic about their education, and they invest their knowledge back into their communities."

James Nations, Vice President for CI's Mexico and Central America programmes says: "More than any other project in CI's portfolio in 21 countries, AMISCONDE has reinforced our belief in achieving conservation by focusing on human beings. The project has taught us that the protection of biodiversity is a natural by-product of helping people improve their economic livelihoods."

Much of AMISCONDE's success will be measured in how long its benefits endure after the programme's sponsors have closed the local office.

"The community and the group will be prepared to continue on their own after the official AMISCONDE office is gone," Tenaura de Ortega says. "Even with difficulties, women are persistent, because of the desire and need for growth that they have."

Lisa Bowen is Media Director of Conservation International. She was assisted locally by Laura Tangley, a freelance journalist.

**Main shot: Cloud forest high in the Talamanca mountains**
**Below: A jaguar, one of six species of cats found in the cloud forest**

Tony Morrison/South American Pictures

A small band of Aboriginal people in the interior of British Columbia in Canada have won a famous victory in saving their ancestral land and protecting a unique 1000 square kilometre wilderness from the loggers. **Jon Tinker** reports.

# Saving the w

The Nlaka'pamux nation has about 5,000 members, and its traditional territories cover much of British Columbia's south-central interior. The largest of the eleven Nlaka'pamux bands is the Lytton First Nation, about a thousand people now living mainly on Indian reserve land along the mighty Fraser river, in and around the small town of Lytton. For over 20 years the Lytton First Nation, a small Aboriginal people led by a determined woman called Ruby Dunstan, has been struggling to regain control of its most precious ancestral land: the Stein valley.

The Stein, a tumbling torrent which drops into the Fraser from the west a few kilometres above Lytton, drains 1,070 square kilometres of wilderness: artic lakes, mountain glaciers, alpine meadows, steep canyons, wide floodplains and above all the unlogged, primary coniferous forest which Canadians call old-growth. Its fauna include grizzly and black bears, cougars, lynx, mountain goats, migratory salmon and trout. The Stein is one of the last remaining untouched watersheds in south-western British Columbia. I asked Chief Ruby Dunstan why it was so special to her people.

"Our elders always respected the Stein. When they went out there to pick berries, to gather fruits, to collect medicines, they would first go to a certain place, make their offerings to the Creator, smoke tobacco, offer prayers. And we were taught that you never ever take more than you need. Archaeologists have found that we Nlaka'pamux people were living in the Stein tens of thousands of years ago. We take our spirituality from the Stein, that is why the Stein is so important to us. It's just there."

Like most of Canada's wilderness, the Stein is Crown land, publicly-owned and effectively controlled by the provincial government, which in 1974 said it wanted to open the Stein to commercial logging. The Nlaka'pamux protested, and a tax-year moratorium was agreed. In 1983, Ruby Dunstan was elected Chief of the Lytton First Nation. During her tenure, 38 valleys in Nlaka'pamux traditional territory were logged. In spite of its inaccessibility, the Stein could not escape for ever.

Soon after her election she was invited to the Queen Charlotte Islands, by the elders of the Haida Gwai people, who were also trying to protect their traditional lands from logging. "Those elders were arrested and sent to gaol, for standing up for what they believed." The memory still makes Ruby Dunstan angry. "They treat us like we're the invaders. God, we're human beings, treat us as such. I decided then I would never allow my people to be thrown in jail for what they know is right. There are always other options in life. You just have to find them."

Gradually, Chief Dunstan found those other options. She built alliances with conservationists, talked to the media, and during the 1980s made the Stein first into a provincial and then a national issue. In 1985 she started the annual Stein Festivals, bringing ecologists, loggers, First Nation elders and other experts together in a public forum to debate the Stein's future. Five hundred people came to the first festival; the last, in 1989, with support from the music world, attracted 26,000.

In 1987, the local First Nations issued the Stein Declaration, stating their determination to preserve the Stein as wilderness, for all time. The same year, the provincial government declared half the valley a wilderness area. But Ruby Dunstan was not totally happy with the way things were going. "We were getting support from environmentalists, but they wanted to take over, to leave us out of the picture. I said stand behind us, but you will not take the forefront, it's our territory. We're not just going to clam up and disappear."

"The government said we had to prove the land was ours. How do we know it's ours? We know. Our parents, our grandparents, taught us. As their grandparents taught them. Just as I'm now teaching my grandchildren."

In 1989 the Lytton First Nation for-

**Below: Logs being floated downstream**
**Right: Canadian brown bear**
**Opposite: Canadian mountain goat**

Tourism British Columbia

Philippe Henry/Still Pictures

Tourism British Columbia

**Main shot: Ruby Dunstan, leader of the Lytton First Nation has succeeded in saving her people's ancestral land**

Jon Tinker

# ilderness

mally declared the whole Stein watershed a park, and named it The Stein Valley Tribal Heritage Park, a Living Museum of Cultural and Natural History. Although in official eyes this designation had no validity, the First Nations giving the Stein a new name had deep, almost mystical, significance. "We already knew what the Stein was," explains Ruby Dunstan. "But in order to protect it from white society we gave it a name, a name which was the best way we could interpret what the elders were telling us about it."

In 1991, Ruby Dunstan ended her eight-year term as Chief, and soon afterwards British Columbia had a new left-of-centre government, more sympathetic to Aboriginal concerns, and pledged to double provincial parks from 6 per cent to 12 per cent of British Columbia's land area. A government official told Dunstan that environmentalists were pushing for the Stein to be declared a new provincial park. "I said no bloody way. I said you can't do anything with the Stein unless you talk to the Indians. They said the public wouldn't like this. I said tough beans."

Serious negotiations finally got under way in 1995, and by November a deal was done. The Stein would indeed become a provincial park: the Lytton First Nation agreed that this status offered the most watertight legal protection. But the Stein was to have an Aboriginal name: the Nlaka'pamux Heritage Park. And it would be co-managed by British Columbia Parks and the Lytton First Nation. The remarkable "co-operative management agreement" signed last year by provincial premier Mike Harcourt gives trusteeship and control to the Nlaka'pamux people.

Traditional First Nation uses of the Stein are confirmed: hunting, fishing, berry-picking, harvesting medicinal plants, bark stripping, root digging and others. Park information materials are to incorporate "Nlaka'pamux legends, myths, histories and teachings...chiefs' burials, vision questing, puberty rites, pictograph sites, spirit caves, power places..." A joint management board is now running the park, with three representatives each from government and the Lytton band; Chief Ruby Dunstan and Britsh Columbia Parks official Earl Sinclair are the two co-chairs.

Regis Cavignaux/ Still Pictures

At present, the Stein has no roads at all, though there are some rough trails. What new facilities would Chief Dunstan like to see? "The bare minimum. Outhouses (toilets), first aid posts, an information centre for hikers. As long as I'm alive, as long as the elders are listened to, we will leave the Stein valley as it is today."

"I hope that visitors will learn to respect the ways of my people, and enjoy what we have enjoyed for thousands of years. What you and I have talked about today could fit into a cherry seed, compared to all that people should know about the Stein."

Jon Tinker is a writer and consultant, and senior associate with the Sustainable Development Research Institute at the University of British Columbia, Vancouver, Canada. He was founder and president of the Panos Institute until 1993.

# Saying 'No' to Asian loggers

Unlike many politicians, the desperately poor Bainings people in the mountains of Papua New Guinea have found the courage to resist the bribes of the Asian loggers. **Nicola Baird** explains how.

The pristine rainforest that covers the steep Bainings mountains of the Gazelle Province in East New Britain is looked on by its inhabitants as a mixed blessing. It may be home - but it's isolated; there are few roads, first aid posts or schools. Besides growing root crops in small forest clearings, selling off land for cocoa plots or performing their traditional fire dances, opportunities to earn cash for essentials like medicines, rice and kerosene are rare.

Nevertheless, in this remote part of Papua New Guinea, the local Bainings people have been able to resist Asian loggers' false promises of much-needed services and their offers of cash, good time girls and beer.

"Every village we have ever visited has had visits from the loggers offering grease (bribes) for trees. Sometimes they have been chased out. Often the loggers take a handful of villagers away for 'further discussions' as their guests in an upmarket Port Moresby pub. And they don't take no for an answer, returning again and again," claims Max Henderson, a naturalised Papua New Guinean.

Henderson was so alarmed by the tactics of the loggers that he helped establish the Pacific Heritage Foundation, in 1992, to provide an alternative for villagers who wanted an entry into the cash economy, but were at risk of being tricked by logging companies to give up their forests for a fraction of the market value.

Forestry in PNG has a tarnished record. Former Minister of Forests, Ted Diro, was dismissed following a judicial enquiry that found him guilty on more than 80 charges of corruption. In July 1995 the Minister of Forests, Andrew Posai, was dismissed on 26 charges of misconduct during his time as Minister of Youth and Home Affairs. As Forest Minister he lived rent-free in a house owned by a subsidiary of the largest logging company in Papua New Guinea, Rimbunan Hijau. One of PNG's most dynamic forest ministers, Tim Neville, who was committed to principles of sustainability, had his life threatened twice

Peter Solness/EPL

for allegedly refusing to accept "grease" from logging company representatives.

Last year more than three million cubic metres of timber was cut by loggers - at least three times above the sustainable rate. The situation has changed little since a still unpublished official enquiry in the PNG logging industry during the mid 1980s. In his report, Judge Thomas Barnett concluded: "Some of these companies...are roaming the countryside with the self-assurance of robber barons: bribing politicians and leaders, creating social disharmony and ignoring the laws in order to rip out and export the last remnants of timber."

Yet villagers like the Bainings people who own thousands of pounds of resources are persistently refused loans by local banks - even for sustainable development projects like the ones backed by Pacific Heritage Foundation.

"Large-scale industrial logging may appear to be an environmental problem," claims Henderson, "but it is really a human rights issue. An average coastal Bainings village, with a population of 150, owns 25,000 hectares of forest valued at $200 million. That they don't have a school, a hospital, a telephone a tractor or a pair of shoes is partly driving the Asian expansion. In five years their asset can be turned into an environmental and asset wasteland, and they still won't have any shoes."

Pacific Heritage Foundation's main focus is on running environmental awareness campaigns, timber skill courses as well as providing a market for villagers' timber. Bainings villagers at Arabam, Riet, Maranagi, Illi, Murungu, Merai and Mu have already exported community timber to Europe. Some is on sale as part of the red hardwood mouldings range at do-it-yourself store B&Q. Indeed the Bainings Community Forest Project has been so successful that it was the first in Melanesia to win internationally recognized Forest Stewardship Council certification, after a gruelling assessment by consultants from SGS Forestry.

Selected trees are only cut after an inventory and careful planning. Once an area has been cut the community leaves it to regenerate before cutting resumes. Walking through the tangled tropical bush, it takes an experienced eye to know where sawmilling took place, even a few months after the final cut. In comparison, the areas logged by heavy machinery turn to mud and then become smothered with kunai grass and vines which choke the

growth of any young trees.

"We had one store before, now we have four. Everyone gets a chance to work, so the benefits are distributed throughout the village," claims George Metpes from Arabam village who spent 18 months convincing his community that they should try and work the sawmills themselves rather than hand it over to a Malaysian logging company.

Nearby in Riet village, the community sawmill project enabled a school room to be built, complete with desk and chairs for primary aged kids. A youth group has been set up and there is a steady, sustainable income for the villagers. Benny Rokoi smiles as he recalls his village's achievements: "High living has come to us without us having to spoil the bush."

Bainings villagers, like Martin Katole, who works on a community forest management project at the isolated coastal village of Mu, are now able to stave off the industrial loggers promises and lies because Pacific Heritage Foundation offers a sustainable, economic alternative. Katole mocks official efforts to check the loggers' activities: "Government in PNG may have the rules and policies, but government isn't behind what it says. It's relying on this forest income so it won't enforce the laws."

His assessment is echoed by Henderson: "The greed is usually from a handful coerced into accepting relatively small amounts of graft in relation to the size of their assets. They act as ambassadors for the exploiters and normally only they benefit - not the community as a whole. We can take action to change what is happening. Or we can do nothing and lose forests of incalculable value to Papua New Guinea - and the world."

Nicola Baird works as a freelance environmental journalist. She is also Director of the Forest Management Foundation, a registered British charity which promotes sustainable community forest projects worldwide.

**Left: logging road at Kimbe, Papua New Guinea**
**Right: Villagers collecting firewood**

Andy Crump/Still Pictures

# Vietnam's patient Pioneer

**Elizabeth Kemf** of the World Wide Fund for Nature, has spent much time working and reporting on conservation efforts in war-torn Vietnam. Earlier this year, she returned to that country to bring up-to-date this profile of Professor Vo Quy.

For years he has been known in Vietnam as "the professor with a smile" and greeted warmly by his former students wherever he travelled. Today Vo Quy is recognized by practically everyone as the "star" conservationist of one of Vietnam's favourite television programmes. Twice a week his face beams out across the country and he explains in simple language the mysteries of nature and why his country people should protect it.

Whether in remote village restaurants or international airports people come up to him just to shake his hand and thank him for his show - and for leading his country's regreening movement. Because of his youthful appearance and seemingly boundless energy it is hard to believe that Vo Quy has been spreading the conservation message for nearly 50 years. He began this almost half a century ago, when while still a teenager, he became the first teacher in his village's first school. When he returns to his home Province of Ha Tinh in central Vietnam, children follow him like the Pied Piper and call him "Uncle Vo".

The country's preeminent environmentalist and the winner of a number of international awards including WWF, IUCN, and UNEP's highest honours, Vo Quy was born in 1929 in one of the country's poorest provinces. In 1951, during the period of the Vietnamese uprising against French Colonial rule, he walked to China where he and his colleagues set up a temporary university. After completing his degree he walked back and resumed teaching in his home province.

In 1956 Vo Quy founded, with a group of fellow academics the University of Hanoi and established the Department of Zoology, of which he later became head. For years he was Dean of the Faculty of Biology, and in 1985 he founded the country's first conservation and management training centre, CRES (Centre for Natural Resources and Environmental Studies).

After completing his Ph.D in ornithology at the University of Moscow in 1966, he published the *Birds of Vietnam*, for which he was honoured by his university with first prize for conservation achievement in 1982. He has also published a children's book *The Birds are our Friends*. In 1985 he compiled, as the leader of a team of scientists from all over the nation, Vietnam's National Conservation Strategy. Less than a decade later the World Conservation Union's Phillips Award recognized him for mobilizing the Vietnamese people to plant some 160,000 ha of trees annually, to help rehabilitate some 2.2 million ha of forest and farmland destroyed during the US/Vietnam conflict.

Thanks to Vo Quy - who led the first team of environmental scientists south of the 17th parallel to investigate the environmental damage caused during the war - almost every school student in Vietnam plants one to three trees per year as part of the school curriculum. He has not only inspired the next generation of conservationists but also trained several generations of them. He operated his conservation centre on a shoestring budget and undertook activities for which the government did not have money, par-

ticularly when it was recovering from the ravages of war.

One of his first tasks was to restore degraded land in the midlands of Vietnam through community based agro-forestry systems. He also led the drive to establish the country's first system of national parks and protected areas, persuaded Vietnam to become the first country in Southeast Asia to join the Wetlands Convention, raised funds for researching and publishing the country's first red data book of endangered and threatened species, named a new species of pheasant, and created through his centre the first post graduate training course for protected area managers. The centre also offers courses in environmental impact assessment training and conservation and agricultural methods on steep mountain slopes. The latter addresses the needs of the country's indigenous people who represent around 12 per cent of the population.

Vo Quy's latest project in his home province, not far from the area where the Sao La and the Giant Muntjac were named to science recently, is in the village of Ky Thuong near the Ho Ke Go Reservoir. Ho Ke Go is a model of how to conserve biological diversity through and with villagers. With this project Vo Quy is breaking new ground again, creating a prototype that can be adapted throughout the country if not the world.

The Vietnamese government declared the forests near Ho Ke Go as a nature reserve, but had no money in the central coffers to protect them. These forests are the home of the Ha Tinh or Vo Quy's pheasant as it is fondly called after the "son of Ha Tinh Province". During the war it was thought that the pheasant and several other species of birds and mammals had become extinct, as the region along the Ho Chi Minh trail, was one of the most heavily bombed during 30 years of uninterrupted warfare. But in 1990 villagers in the Ho Ke Go area caught some Ha Tinh pheasants which gave scientists new hope for their survival. Those that managed to escape the local dinner plates were taken to the Hanoi Zoo - where a successful captive breeding programme is underway.

In Ho Ke Go the priority for protection is the habitat of the pheasant and other species of plants and animals including the giant muntjac, tiger, and elephant. When Vo Quy was invited by the district to help conserve the home of the pheasant and to reduce hunting and logging pressure on the forest he took what might be considered an usual approach in Vietnam, "bottom-up, not top-down," as he describes it.

"You have to listen to the people, you have to let them decide what they need, what they want, and how they want to get it," explains Vo Quy. "First you have to use this," he says pointing to his eyes. Observation is key, then listening, then thinking, but above all letting the villagers determine what they need. That has been the key to the success of the Ho Ke Go project in taking pressure off the forest - and maintaining the watershed - and improving the economic conditions of the villagers living in the buffer zone of the reserve.

In the past two years Vo Quy with his team of project managers has introduced a new strain of rice, developed with the Rice Institute in Hanoi, and increased production by between 15-20 per cent. The project has also initiated beekeeping and fruit tree farming and established co-operatives to market the products, created tree nurseries using indigenous species, set up a community guard system to patrol the forest, constructed small dams tapping them with mini-hydroelectric units, and improved irrigation. None of this is for free. The villagers take out interest free loans which they repay with their increased earnings.

This May, Vo Quy and I visited Ho Ke Go with the director of Oro Verde, Dr Manfred Niekisch, who put up the seed money to get the project started. We showed the villagers a film about the project, and which they helped make last summer. Hundreds of people gathered in the mayor's house to watch, to discover themselves on the TV screen powered by the newly installed hydro-electric power plant. The screening gave rise to euphoria at first. But one village woman observed: "In the film our village looks more beautiful than it is. We are still poor, and the six other villages around us are also poor. We are grateful but we have a long way to go."

The professor smiled as crowds gathered around him waiting for his reply. He announced that he had been given a Pew Scholarship Award from the University of Michigan in the United States. The project would continue and it would expand until it eventually reached all 35,000 people living around the reserve. The mood grew optimistic. The group asked to watch the film once more.

Vo Quy left the proud community to view its achievements while he went off to inspect the new tree nursery. There among the saplings in less than an hour the village leaders told him what the community needs were: to finish construction of the school, improve the health centre, and to multiply the effects of the project to include additional families. Vo Quy listened patiently, letting the people decide.

Elizabeth Kemf is Species Conservation Co-ordinator at WWF International in Gland, Switzerland and author of *Month of Pure Light: the regreening of Vietnam*, on which several documentary films have been based.

**Left: Vo Quy with forest guards in the Ho Ke Go nature reserve**
**Middle: Women collecting firewood in Ho Ke Go forest**
**Right: Logging versus replanting in Vietnam**

Vo Quy/Elizabeth Kemf

# Last word by Don Gilmour

# Where do

Most of the case studies described in this magazine illustrate the ability of local communities and indigenous groups to manage forests in a way that provides for economic benefit while at the same time ensuring the long term survival of the forest itself.

However, the reality of the situation, if we take a holistic view, is that these examples, while important in themselves, represent only islands of hope in an otherwise depressing landscape. Many of them are also under threat from government policies which do not value indigenous knowledge and management skills and from industrial forestry or agricultural enterprises with their rather narrow view of development.

How can we build on the good examples that are available to ensure that local and indigenous communities can have an increasing influence on forest management outcomes? There are a number of things that need to be done.

## Fourth world

There are many initiatives at the international level which are influential in affecting outcomes in the forest. Admittedly, many of these are very remote from the forest floor but are nevertheless important in creating a policy environment which can become sensitive to such things as indigenous peoples rights and the role of local communities in forest management.

Many NGOs and some governments are advocating positions which argue for greater empowerment of indigenous and local communities in this area and there are both pragmatic and ideological reasons for putting emphasis on these issues. It is important that such positions be supported and there seems to be a ground swell of support building as the 'Fourth World' (the world of indigenous communities) is being acknowledge in international fora as requiring special attention.

The various international fora provide a rather esoteric debating arena for practical forest management issues and it is at the national level where relevant policy and legislation are formulated which directly impact on the rights and responsibilities of the various stakeholders.

A new approach is needed to move beyond the conventional distinction in development planning between 'top-down' and 'bottom-up' models. The 'top-down' approach has proved to be inadequate because such approaches do not give adequate recognition to communities' rights, abilities, knowledge, strategic positioning and potential. As a result, the approach has failed to secure the involvement or commitment of affected communities in planned development initiatives.

However, whilst very necessary and sound in terms of community participation and empowerment, 'bottom-up' approaches by them-

Ron Giling/Panos Pictures

WWF/Martin Harvey

selves may not necessarily create room for community action in the management of the global environment. It has been noted that, to date, bottom-up approaches have not constituted a full-fledged development strategy and that to be effective they require an enabling national policy framework.

Indeed, 'bottom-up' approaches alone may obscure the responsibilities of the national and international levels to facilitate such a process and may fail to link local initiatives to global efforts - the application of 'bottom-up' planning

# we go from here?

has, by and large, only been good for addressing localised problems. In the post-UNCED context, there is an immediate need for a two-way link from local people into international policy formulation and decision-making, including resource allocation, and from the international community to local communities, in recognition of their crucial role in both maintaining and influencing global environmental services.

A planning framework of 'pluralistic planning' is not focused on either a movement downwards or upwards. Rather, it is focused on the link between local action and global environmental issues, a middle ground which is often overlooked. It is still fundamentally based on local knowledge, local experience and local action.

Pluralistic planning aims to both provide a mechanism for translating agreements adopted by the international community into local environmental management and development programmes, and a mechanism for using local experience to refine and reformulate both national and international policy instruments.

Reviews of large international environmental programmes such as the Tropical Forestry Action Program (TFAP) have suggested that a major reason for low levels of effectiveness has been the fact that many efforts in particular areas were not country-driven and failed to secure the appropriate involvement of affected communities. Achieving effective linkages between international programmes and affected communities will involve commitment to participatory approaches and development of specific mechanisms to facilitate local participation in international programmes. Some important initiatives could include:

- The general objectives of international agreements such as the Biodiversity Convention, the Convention on Climate Change, and the International Tropical Timber Agreement, need to be translated into more specific targets such as the aerial extent of protected areas that will be needed to secure the conservation of viable, bio-geographically balanced samples of the major plant communities and rare or endangered species. These more specific targets could then be used to facilitate both the development of detailed country action programmes and the mobilization of targeted, performance-driven support from the international community.
- National commitments to international agreements for environmental management and conservation need to be translated into specific national targets for conservation action, for example, a national commitment to Biodiversity Conservation might be translated into a small number of specific proposals for additional protected areas and a number of specific changes to forest management or agricultural practices; national commitments to sustainable forest management may be translated into an area target of "well managed" forest.
- In each of the above cases, agreements with local communities could be brokered so that management of these areas would be undertaken by local communities on a fee for service basis, with the role of national governments and their bureaucracies limited to one of standard setting and monitoring. Ultimately, local communities should be given the power to decide how they may best contribute to the achievement of established targets.
- Gradually, and perhaps most importantly, feedback loops need to be developed so that progressively acquired local experiences can be fed into the international and national policy review process to allow the refinement of more appropriate and achievable targets. For this to occur, the targets established under international agreements must reflect the social, economic and environmental realities of affected communities at all levels. In particular, this process should identify the specific interventions that will need the support of the international community to achieve accepted global objectives of conservation and sustainable development.

In summary, pluralistic planning recognises that there is a need to concentrate efforts at a middle ground in three ways. There must be more effective linking of local initiatives for both conservation and development to the process of global environmental management. National and international agreements on the environment must be translated into locally relevant targets for the development and marketing of local action programmes focused on providing environmental management services. And there must be a search for mutual responsibilities and complementarities, for example, defining appropriate roles for all levels of involvement in environmental management - local, national and global.

Key requirements to make these linkages effective include establishing clear lines of communication between local communities and policy makers and well-defined mechanisms for setting and reviewing environmental and development priorities and choice of actions.

Don Gilmour is Co-ordinator of IUCN's Forest Conservation Programme in Gland, Switzerland. He has worked extensively on forest projects in Nepal, and in Australia for the Forest Research Institute.

# Associates' news

## PULP FICTION

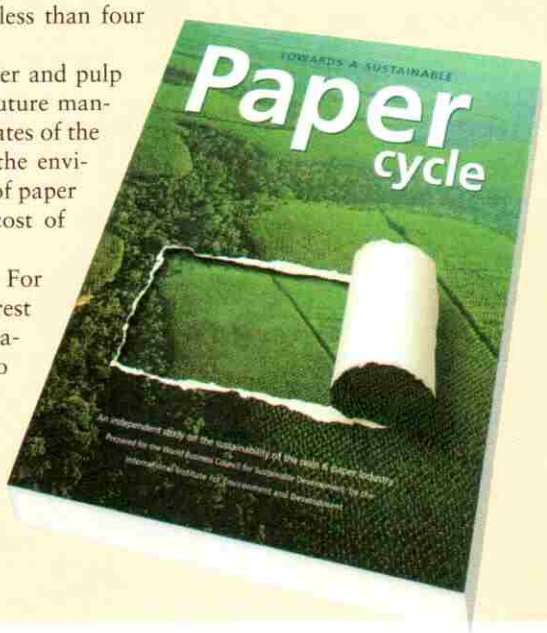
Only one per cent of the global paper industry is sourced from tropical rainforests, and agricultural expansion is by far the biggest cause of tropical deforestation, says a new report on the global paper and pulp industry.

The report *Towards the Sustainable Paper Cycle*, produced by the International Institute for Environment and Development, says that much of the current debate about the performance of the paper industry is often based on assertion, unsupported by hard analysis. It argues that the world is not running out of wood and explains how the world's current paper needs could be easily met and managed if an area of land the size of Sweden was devoted to pulp wood plantations - an area less than four times than that taken up by high-yielding plantations now.

The report is the most comprehensive to date on the global paper and pulp industry. It addresses every aspect of the paper process and the future management of the industry and focuses on a vast range of issues: estimates of the world's future paper needs; paper and its impact on society and the environment; the real environmental costs of recycling; the production of paper from non-wood fibres; the current pollution problems and the cost of cleaning up.

In its conclusion, the report identifies priorities for action. For instance, it calls on the industry to subject itself to independent forest management audits and certification of wood. It also urges international agencies to establish an international arbitration panel to advise in cases of suspected unsustainable practices and ensure that no financial support is given to forest mining.

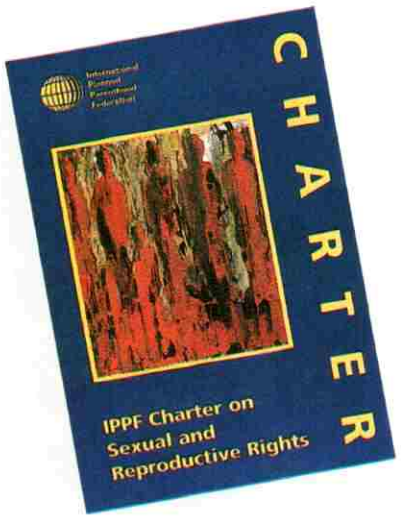
For a copy of the report contact World Business Council for Sustainable Development, Distribution Dept, E & Y Direct, Unit 5, The Alpha Centre, Upton Road, Poole, Dorset BH17 7AG, UK. Fax: 01202 661999.




## REPRODUCTIVE RIGHTS

To mark the first anniversary of the United Nations Fourth World Conference on Women held in September 1995 in Beijing, the International Planned Parenthood Federation (IPPF) has recently launched a *Charter on Sexual and Reproductive Rights*.

The Charter identifies 12 key rights which show the legitimacy of advancing sexual and reproductive rights of women, men and young people to make free and informed choices regarding their own sexual and reproductive health.




The Charter, which builds on many of the achievements of the 1994 International Conference on Population and Development, in Cairo, has two main objectives: to raise awareness of the extent to which sexual and reproductive rights have already been recognized as human rights by the international community, and to make clear the connection between these human rights and the lives of men, women and children whose needs in these areas are still unrecognized.

Ingar Brueggeman, IPPF Secretary-General, expressed the hope that the Charter "will help to transform rights into realities for the many women and men currently denied their sexual and reproductive health and rights that are basic human rights and fundamental to sustainable development."

The Charter has been adopted as IPPF policy by its 127 family planning associations, as part of its Vision 2000 mission and forms an ethical framework for the right to sexual and reproductive health. IPPF's member family planning associations will be working through parliamentary groups and women's and human rights organizations to raise awareness of reproductive rights abuses and to change the law and practice in their countries.

The Charter is available in English, French and Spanish and Arabic from IPPF Distribution Unit, Regent's College, Inner Circle, Regent's Park, London, NW1 4NS.
Tel: +44 (0) 171 486 0741, Fax: 487 7950,
Email: csavage@ippf.attmail.com

## TAKING THE LEAD

A new Population Action International (PAI) study warns that if the UN Population Fund (UNFPA) is to continue its global efforts to expand access to family planning and other reproductive health services, it will require greater financial support from donor countries - in particular, the United States - in order to adequately fund and staff its programmes in more than 100 countries in which it operates.

The PAI study, *Taking the Lead: The United Nations and Population Assistance* recommends that UNFPA work to increase funding for population and reproductive health programmes; strengthen its leadership role on policy issues at a country level; focus its funds on a smaller number of countries

and programme areas; draw on more private sector expertise, including that of non-governmental organizations; and expand its role as a provider of contraceptive supplies.

"Two years ago, in Cairo, the world's nations agreed to an ambitious agenda for making key reproductive health services, such as family planning and safe maternity care, available to all who want them," says Shanti Conly, PAI's Director of Policy Research and author of the study. "Since then, UNFPA's has focused on how to translate that agenda into action. While much remains to be done, UNFPA is clearly on the right track."

The PAI study also emphasizes the need for improved collaboration among UNFPA, the World Health Organization (WHO) the UN Children's Fund (UNICEF), since these three organizations are at the forefront of UN efforts in the overlapping fields of maternal and sexual health and child survival.

For a copy of the report contact PAI, 1120 19th Street NW, Suite 550, Washington DC 20036, USA. Tel: (+1 202) 659 1833, Fax: (+1 202) 293 1795.

## BROADCAST NEWS

Two new radio programmes in Kenya have succeeded in reaching young people with information about sexual responsibility and reproductive health. The Youth Variety Show, a one-hour, up-beat Saturday morning programme in English, and Dau La Ujana (The Boat of Youth), a 15-minute radio serial drama on Sunday evenings in Kiswahili, have reached youth and adults alike.

The shows encourage communication between youth and parents. They also direct listeners to centres that can assist them with counselling and services.

More than half the 15 to 24 year-olds interviewed in household survey in January have listened to the Youth Variety Show and 20 per cent of them reported taking some action as a result. Nearly 40 per cent listened to Dau La Ujana.

JHU

Statistics from three health centres also revealed the effectiveness of the programmes. Four months after broadcasting the shows, over 55 per cent of youth cited radio as their main source of information about the health centres, compared with less than 25 per cent at the outset.

The programmes are part of the Youth Initiative Project, sponsored by the Family Planning Association of Kenya (FPAK) with technical assistance from the John Hopkins Population Communication Services project and produced by the Kenya Broadcasting Corporation.

For further information contact the JHU Population Communication Services, 111 Market Place, Suite 310, Baltimore, Maryland 21202-4012, USA. Tel: (+1 410) 659 6300, Fax: (+1 410) 659 6266.

## INTERFAITH COALITION

Religious and faith leaders representing major denominations in the United States have joined The Centre for Development and Population Activities (CEDPA) to form the Interfaith Coalition on Women, Poverty and Population.

The Coalition aims to promote policies and programmes to implement the agendas of the 1994 International Conference on Population and Development in Cairo and the 1995 Fourth World Conference on Women in Beijing.

According to the Coalition, the slashing of aid in the US Congress from $547 million in 1995 to $72 million in 1996 will have a devastating effect in the developing world on reproductive health and family planning services, leading to increases in unintended pregnancies, infant mortality, death in childbirth, and abortion.

With support from CEDPA and the Pew Charitable Trusts, the Coalition is working with policy-makers, congregations and communities to increase awareness of the linkages between, poverty, rapid population growth, the status of women and sustainable development.

A volume of essays by Coalition members exploring these issues, including the Rev. Joan Campbell Brown, Head of the National Council of Churches and Dr Riffat Hassan of the University of Louisville, is available from CEDPA.

For further information contact Sarah Craven, CEDPA, 1717 Massachusetts Avenue NW, Washington DC 20036, USA. Tel: (+1 202) 667 1142, Fax: 332 4496.

## SAFE PRACTICE

Since 1993 AVSC International has been working with three university hospitals in Egypt to test a pilot service called the Safe Reproductive Health Program.

The service consists of screening, referring and counselling women at high risk of obstetric complications at birth (mortality and morbidity of the mother and infant), and offers an expanded range of contraceptive options at more centres.

The Program also seeks to strengthen links among prenatal, postpartum, and family planning services and, by doing so, increases the involvement of staff from these different departments.

Already, standards of practice for postpartum IUD (PPIUD) insertion and tubal ligation have been developed at the three universities. New PPIUD services have been initiated, and there is increased awareness and support for tubal ligation services for high-risk women.

Client counselling has also been introduced and enthusiastically received, and infection prevention practices have been assessed and strengthened at each site.

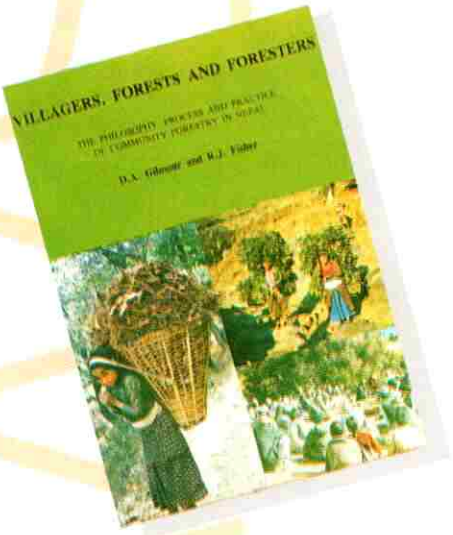
The government of Egypt has asked AVSC to assist in expanding the Program to other university hospitals and to the national public sector program over the next two years.

Jeremy Hamand/IPPF

For further information contact AVSC International, 79 Madison Avenue, New York, NY 10017, USA. Tel: (+1 212) 561 8000, Fax: (+1 212) 779 9439, Email: info@avsc.org

*Associates' News is compiled by* **Maya Pastakia** *to whom all contributions should be addressed.*

# Books




## VILLAGERS, FORESTS AND FORESTERS:

### The philosophy, process and practice of community forestry in Nepal.

Don Gilmour and Robert Fisher
Sahayogi Press, Kathmandu,
1992, US$15 pb

This is a country case study with far-reaching implications. Nepal in the 1970s was the stage for the "rediscovery" of community forestry by experts from the North. It was also one of the first countries in the world to make a serious attempt to place great importance on people managing forest resources for their own benefit.

The authors have both had a long involvement with the Nepal-Australia forestry project which is a rare combination of sound project design based on the principle of local participation and the humility of project staff. As a result there has been a genuine learning from local people and their environment.

However, the book is more than just a description of the project, more importantly it is an attempt to develop a holistic approach to community forestry - one which will only succeed if there is harmony between humans and nature.

## INTRODUCTION TO WORLD FORESTRY

Jack Westoby
Basil Blackwell, Oxford, 1989,£12.95

This is a brilliant introduction to the complex world of forests, and the conflicts that surround them at the end of the 20th century. Jack Westoby writes with passion about the evolution of trees and their social and ecological importance. He includes a number of extremely useful country reviews and a critique of current aid and development policies as they affect forests.

## CLEARCUT

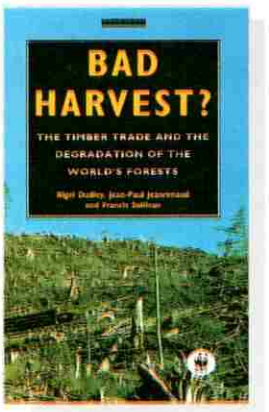
### The tradegy of industrial forestry

Bill Devall
Sierra Club Books/Earth Island Press,
1993, US$30 pb

If Westoby's approach is people-centred then this striking book is nature-centred. The spiritual dimension of trees and forests is highlighted and the tragedy of their destruction is starkly illustrated with 169 pages of full colour plates. Not a book for the squeamish!

The pictures are matched by a series of deep-cutting essays which leave the reader with the uneasy feeling that as forests are destroyed so is the human soul. The book is dedicated to the "memory of the plantlife, birds, insects, animals and indigenous cultures that have been driven to extinction by the greed and delusion of human arrogance". That says it all.

Jean-Paul Jeanrenaud




## BAD HARVEST?

### The Timber Trade and the Degradation of the World's Forests

Nigel Dudley, Jean-Paul Jeanrenaud and Francis Sullivan
Earthscan, London, 1995, £12.95

This book is a most timely contribution to the growing debate on forests and forest management. As never before, the world's attention is being focused on forest issues with the host of meetings associated with the UN Commission on Sustainable Development's Intergovernmental Panel on Forests and the InterAction Council's World Commission on Forests and Sustainable Development.

High on the agenda in these discussions are the possible actions and institutional arrangements that might better secure the conservation and sustainable management of forests, in accord with the Forest Principles adopted at the 1992 UNCED meeting in Rio.

*Bad Harvest?* will make a significant contribution to these discussions because of its focus on the totality of forest issues including the loss of forest quality. It also gives considerable emphasis to the illegal timber trade - a trade whose existence is not reflected in many national and international statistics on forest use. The book challenges the conventional wisdom that the timber trade plays only a minor role in these problems and that most forest degradation occurs because of the actions of the rural poor in developing countries.

The authors show that, in the temperate and boreal zones, timber harvesting activities are indeed a major force leading to the modification and degradation of old growth forests in particular. In tropical areas, the book shows that, while timber harvesting itself may not be the immediate cause of forest loss, it is often the first agent of forest disturbance and, that in areas with significant population pressure, timber harvesting can be a significant catalyst for accelerated forest colonization and deforestation.

The book is not without faults. The cited support for many of the examples of impacts or practices frequently relies on newspaper reports and does not make sufficient use of the large volume of more rigorous scientific literature.

Nevertheless, the basic message of the book is entirely sound. The timber trade is having a pervasive and unnecessarily destructive impact on the world's forests. The number of examples of genuinely sustainable forest management that sustains all forest ecosystem values and not just the commodity production of timber are all too few.

Despite the failings of forest management in all forests and in most countries, the book ends on a hopeful note by pointing out that this is not the way things have to be. It gives a useful summary of the many initiatives currently being undertaken by governments, environmental groups and, in some cases, the timber industries themselves to bring about more sustainable forest management.

David Cassells

David Cassells is a Senior Environmental Specialist on Forest Resources at the World Bank.

## WIDOWS AWAKE

### A World of Widows

Margaret Owen
Zed Books, London, 1996, £13.95 pb

Everywhere around the world, widows comprise a significant proportion of all women, ranging from 7 per cent to 16 per cent of adult women. Whereas, in all regions, widowers comprise only 2 to 3 per cent of adult men. This is due, in part, to the fact that husbands are generally older than wives and that women often outlive men. But also to the fact that, in many cultures, men are far more likely to remarry than women. Indeed, some societies encourage widowers to remarry but prohibit widows from doing so.

Reflecting differences in age at marriage and in remarriage practices, widowhood in developed countries is experienced primarily by elderly women, while in developing countries it frequently affects younger women as well. Further, many societies have rules regarding female behaviour and gender relationships which have particular (often dire) consequences for widows, especially in the absence of social support systems.

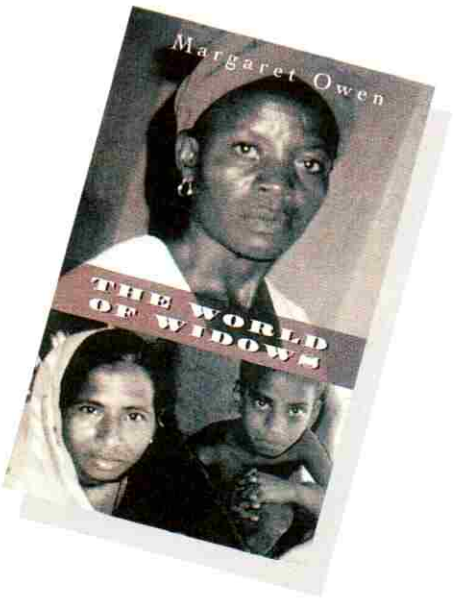
Until recently, however, we did not know these basic facts about widowhood in developing countries. Over the last decade, particularly the last five years, a number of studies have focused on the lives of widows and widowhood as a social problem in the developing world. The most recent - and global - of these is entitled *A World of Widows*.

In this engaging book, interspersed with quotes from widows she interviewed in Uganda, Zimbabwe, India, and Bangladesh, women's rights lawyer, Margaret Owen, highlights the status of widows in developing countries with a particular focus on specific categories of widows (AIDS, child, elderly, and refugee widows).

Four chapters of the book focus on these special categories of widows. Other chapters focus on certain generic issues faced by most widows: livelihood and maintenance; inheritance; sex and sexuality; remarriage; human rights and legal protection.

In her concluding chapter, entitled 'Widows Organising for Change', Owen describes the collective efforts of widows - either through their own associations or with the assistance of intermediary organisations - to fight for their economic, social, and legal rights in Africa and South Asia.

Written in a direct and lively style,




the book does what the author intended it to do: engage the reader in an issue which until now has remained largely invisible. Whereas the evidence she has collected is admittedly anecdotal, Margaret Owen succeeds in presenting a tantalizing view of widows' lives and of the complex social rules surrounding widowhood in Africa and Asia.

Through the insights she shares and the questions she raises, Owen offers a practical agenda of policy and research issues relating to widowhood in the developing world. Her challenge to the reader and to the development community more generally is to focus on widows as a vulnerable category of women and on widowhood as a social problem.

Martha Alter Chen

Research funding for *A World of Widows* was provided by the Swedish International Development Cooperation Agency in collaboration with Planet 21. Martha Chen is a Research Fellow at the Harvard Institute for International Development.

# Films

## FATE OF THE FOREST

For over 20 years the destruction of the world's tropical forests has been at the forefront of environmental protection campaigns. Yet the devastation continues. *Fate of the Forests* highlights new strategies for conservation.

Visiting Uganda and Peru, the programme shows how poverty is forcing local peasant farmers, desperate for fertile land, to make more and more incursions into the forest. One alternative may be agro-forestry techniques - using existing trees for commercial products, and planting trees to protect fragile farmland.

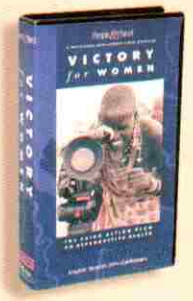
In Guyana, however, the threat to the country's primary rainforests comes not from slash-and-burn farming but from the highly destructive, large-scale logging operations of South East Asian timber companies. One solution, the film suggests, is to adopt a system of eco-labelling sustainably produced logs first pioneered in Indonesia.

*Fate of the Forests* has been produced as a special half-hour documentary for *Earth Report*, by producer Marc de Beaufort and Carlton Productions for TVE/WWF. *Earth Report* is a series of 52 five-minute news features covering a wide range of environmental and development issues which aims to be an ongoing assessment of how well the world is doing to meet the targets set by the 1992 Rio Earth Summit.

★ TVE's new film catalogue, *Moving Pictures 6* is now available.

Contact the TVE Distribution Office at:
TVE, Prince Albert Road, London NW1 4RZ, UK.
Tel: +44 (0) 171 586 5526,
Fax: +44 (0) 171 586 4866,
Email: tve-dist@tve.org.uk

## INVESTING IN PEOPLE




The fourth in the series of 26-minute *People & the Planet* videos is now available. Entitled **Investing in People** this film is a brilliantly told story of two development projects in the Philippines and Indonesia which demonstrate the importance of community participation in successful development efforts.

The first follows one village's success in western Java in building a road as part of the regional Village Infrastructure Project. This encourages villagers to decide exactly what they need and gives them control over funds and local labour.

The second follows the Central Visayas Regional Project in the Philippines where local fisherfolk have been granted rights over areas of mangrove they replant themselves. The film shows how this self-sustaining project has improved fish stocks and provided much needed wood for building and fuel.

All four *People & the Planet* videos are available in English, French and Spanish versions from TVE at the address above. The other titles are **Victory for Women** (on the outcome of the Cairo Population Conference), **Learning for Life** (on the education of women and girls) and **Calling the Shots** (on how women are finding new ways of communicating).

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# People & the Planet

**Our next issue** will report on progress in reproductive health

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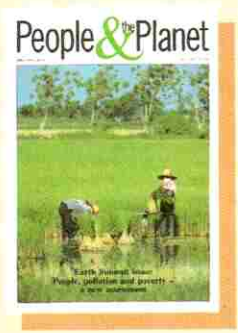

Volume 1 Number 1/2
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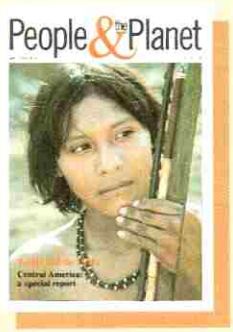

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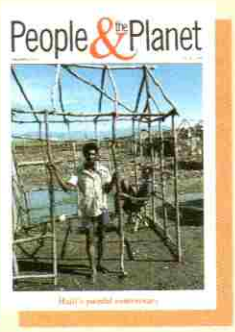

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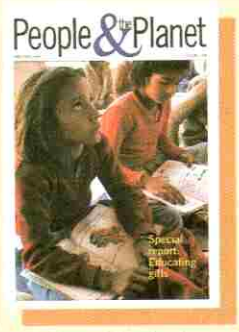

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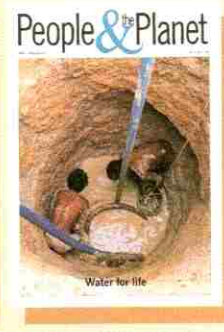

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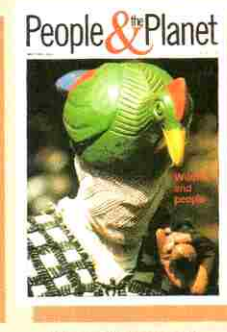

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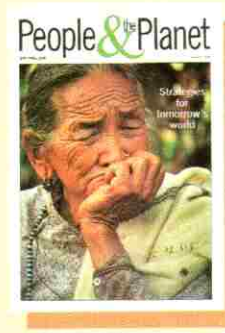

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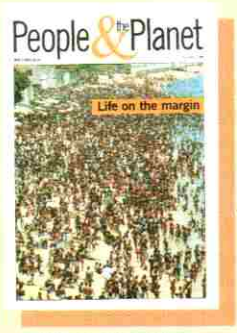

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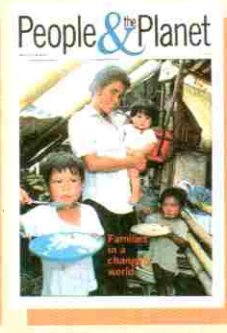

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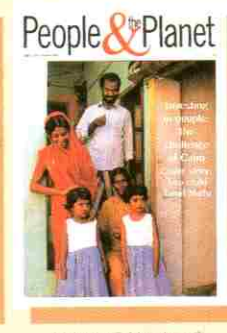

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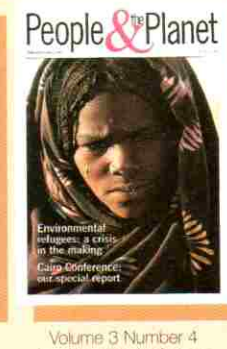

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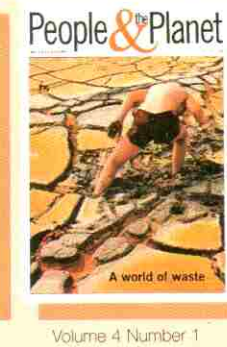

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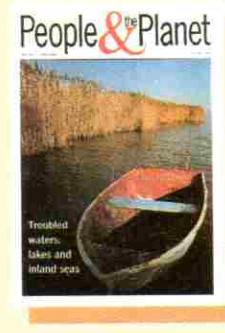

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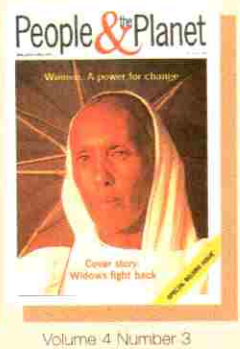

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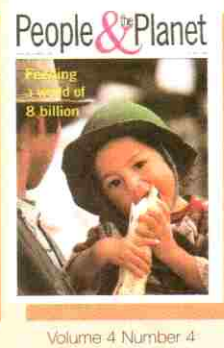
Special Beijing issue



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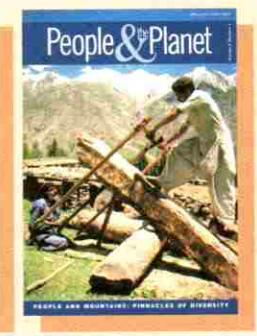

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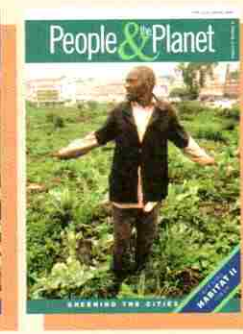
People & mountains



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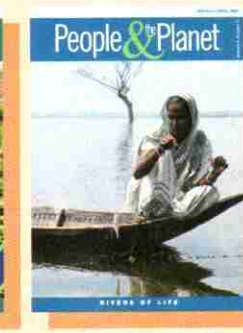

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